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M. Šorn

Designing with children

Spatial Literacy explored through Communication
between Children and Spatial Designers

Thesis submitted for the Degree of Doctor of Philosophy

2017

Designing with children

Spatial Literacy explored through Communication between
Children and Spatial Designers

Maša Šorn

Thesis submitted for the Degree of Doctor of Philosophy

The University of Sheffield School of Architecture

January 2017



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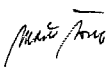
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Abstract

With this PhD thesis I explore the ways in which spatial literacies are manifested and negotiated in interaction between children and designers engaged in spatial design. I do so by describing the ways in which talk-in-interaction between children and spatial designers is accompanied by gestures and the use of artefacts. By extending the theory surrounding everyday literacies and multimodal language to the field of spatial design, I draw on a cross-disciplinary theoretical framework of ‘spatial literacies’ to understand the data through the lens of ‘reading and writing space’. I use this framework as a starting point as well as an analytical lens for exploring my research interests.

Within the context of three live spatial design projects, this research draws on principles of Focused Ethnography to collect data in naturally occurring interaction (Knoblauch, 2005; Wall, 2014). The case study projects took place in 2014 in Germany, Slovenia and the UK, engaging children aged 6-10 years through various design methods (sketching, model-building, making videos) with the process of designing various spaces for children (a department store café area, primary school open spaces and a primary school playground). My role in the German and English case studies focuses on being a researcher, whereas in the Slovenian case study I adopt a dual role of a designer and researcher.

A novel combination of Ethnography, Autoethnography (Ellis and Bochner, 2013, 1996; Geertz, 2000) and Conversation Analysis (Antaki, 2011a; Sacks et al., 1974; Schegloff, 2007) is used to capture a unique portrayal of how two cultures – the culture of children and the culture of spatial designers – meet through the process of communication. Besides the methodological contribution to knowledge, this research adds an original contribution to the broader debate on how to support more effective communication in spatial design.

Key findings show how spatial literacy can be a social, interactional and flexible process rather than an unchangeable skill that people ‘possess’.

Throughout the three case studies, the designers were observed to use their talk, gestures and the use of artefacts to engage children in a creative exchange of interpreting space representations, while also expanding the children's skills to 'read and write space'. The designers created conditions for children to see and experience space in new ways through demonstrating the relevant skills for reading and writing space, required to express their spatial design ideas.

Acknowledgements

"I blame all of you. Writing this book has been an exercise in sustained suffering. The casual reader may, perhaps, exempt herself from excessive guilt, but for those of you who have played the larger role in prolonging my agonies with your encouragement and support, well... you know who you are, and you owe me."

(Pietsch, 2015, p. vii)

My supervisor **Dr Rosie Parnell** has invested so much enthusiasm, patience and imagination into my PhD, that I fail to find words to express my gratitude. This thesis is as much mine as it is hers.

I have also been extremely fortunate to work with a brilliant team of second supervisors **Dr Ray Wilkinson, Dr Nishat Awan and Dr Cristina Cerulli**, who have each contributed their time and wisdom to this thesis, by giving me clarity and direction at crucial points throughout this journey.

I am grateful to **Leverhulme Trust** for funding my PhD. By being part of a larger research project I also benefitted from invaluable advice, discussions and inspiration from the most wonderful research team **Dr Rosie Parnell, Dr Jo Birch and Dr Maria Patsarika**.

My sincere gratitude goes to the amazing design practitioners **Urška Kranjc, Andreja Štrukelj, Susanne Hofmann and Barbara Kaucky**, as well as all **participating children and adults** who took part in my research, for sharing their experiences with me.

Marina Assejev in Avi Šorn, brez vaju ne bi bilo ne mene, ne te dizertacije. Doktorat posvečam vama. Люблю вас всегда и навсегда!

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Preface

Dear reader,

"Who am I as I write this book? I am not a neutral, objective scribe conveying the objective results of my research impersonally in my writing. I am bringing to it a variety of commitments based on my interests, values and beliefs which are built up from my own history ..."

(Ivanič, 1998, p. 1)

Hello and welcome to my thesis. Before you start reading, I feel like it is important to make clear why I choose to communicate in the way that I have done. My 'self' is present throughout this research in an open way, exposing my multiple identities as a doctoral student, a research assistant, a landscape architect as well as many others. My voice can be found within the core of data production and interpretation, and it is unavoidably seen throughout my writing. The contribution I bring to knowledge is therefore intertwined with the identity I carry along with me on this research journey, and I believe making that explicit in the beginning would help you, the reader, to shape your own critical position for reading my work.

The reason I dare indulge in such a personal preface is that the style of first person writing is used throughout the thesis, as the level of my personal engagement in the studied live design projects required me to develop an ethnographic (following the work of Bajc, 2013; Carspecken, 1996; Collier, 1967; Emerson et al., 1995; Fetterman, 1998; Geertz, 2000; Knoblauch, 2005; Pink, 2015, 2013, 2001; Schensul et al., 1999; Schensul and LeCompte, 1999; Van Maanen, 1988; Wall, 2014; Yaneva, 2009a, 2009b to name a few) and auto-ethnographic voice (Ellis, 2009; Ellis et al., 2010; Ellis and Bochner, 2013, 1996; Humphreys, 2005; Maton, 2003; Mizzi, 2010; Muncey, 2010; Nadon, 2009; Quicke, 2008; Reed-Danahay, 1997

and others). This way of academic writing is unavoidably linked to who I am as a researcher, practitioner, as well as a person (Ivanič, 1998), as I think about, discuss, analyse, describe and interpret three live design projects – live case studies, which are my primary source of data. These case studies and the participants involved in them have experienced my engagement in various roles (ranging from an observer, to an interviewer, a co-designer and project initiator), which have, in return, influenced the way in which I experienced these case studies and the interactions with participants. I use my voice as a vehicle for recording and reporting my experience of using my body and senses as a ‘tool’ for data collection, or rather, data ‘production’ (Bochner and Ellis, 2016).

What I also bring to this research are my interests and motivations underpinning the research question, which was born under the umbrella of a larger research project within which I had been appointed as a research assistant in constant collaboration with research team members. My doctoral research is based on a Leverhulme Trust¹ funded research project running from 2013-2016 called *Children Transforming Spatial Design: Creative Encounters with Children* (www.designingwithchildren.net), led by principal investigator Dr Rosie Parnell in close collaboration with research associates Dr Jo Birch and Dr Maria Patsarika (described in more detail in Appendix 4).

The PhD and the larger project share the approach and methods of data collection within the same case studies; however the important distinction is in the focus of research interest. Shaping the overarching PhD research question has been an iterative process, initially guided by my prior experience as a practitioner with more than ten years of experience in the field of spatial design and planning in Slovenia (working on projects involving playground and park design, urban design and planning, small scale urban regeneration permanent and temporary interventions, and sustainable urban water and transportation systems, and people’s engagement in planning and decision making processes). Through the process of working on the larger research project I have further developed an interest in the use of communication within the case study design

¹ This PhD was funded through a studentship as part of the Research Project Grant from the Leverhulme Trust.

process, which has led me to investigate the case studies from a specific angle feeding back into redefining the research question and sub-questions. This iterative process is perhaps something I bring with me from my design background, and I think it is important for you to know that the research focus has been moulded through my constant communication process with literature and data.

This PhD would not have been done without the larger project, or it would be a different research study altogether. While the project provided the broader context of the study, data collection and case study selection, my own interests have guided me to explore the data in a unique way, from a perspective of a practitioner as well as a member of a research team. There is no denying that the research project influenced the PhD in so many ways, but even far more importantly, it shaped me as a researcher and as a person, through weekly meetings, chats, conversations and constant support from the most wonderful research team members Rosie, Jo and Maria.

The identity I build through my writing therefore exposes me to you in so many ways, that I simply cannot address you as a figureless and faceless reader. Apart from general assumptions about your academic interests and motives for reading my thesis there is not much else I can assume about you.

“Who are you, the reader? [...] I don’t know your nationality, which language(s) you speak, or anything about your cultural background and experience. What can I take for granted that you know about, so I only need to allude to in my writing? What do you need me to spell out in detail because it is not entirely familiar to you? What are your positions on issues which come up in this book? [...] In the light of all this, how are you going to react to the identity that I am constructing for myself as I write? Will we get along well together, or will I alienate you? The answer to these questions will be different for each of you reading this book.”

(Ivanič, 1998, p. 2)

I choose to overcome this issue by imagining you as a travel companion, who will follow my journey in another place and time. Consider this thesis a form of a travel journal to help me guide you through the key messages I used to shape a story – a narrative following the stepping stones that helped me shape my research interests.

It is not my intention that you see this work as a list of guidelines about how to improve or change a participatory process. It is meant to be a vehicle for reflection; a narrative that offers a window into other people's worlds. It is an in-depth exploration of three case studies, which have served as a platform for forming my own identity through their experience. I depart on this journey of exploration aiming to contribute to knowledge by offering an original methodological and analytical approach to better understanding 'spatial literacy' as it is being used in interaction, and therefore adding new insights into the spatial design process. I hope you enjoy this journey and I hope that it will touch your view of the world if only just lightly.

'Anything we experience and learn from changes us, on both personal and professional levels; every time one's view of the world shifts, one begins to see things one has not seen before, or to see them differently.'

(Craib, 1984, p. 250)

SECTION 1: DEFINING KEY INTERESTS AND RESEARCH APPROACH

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1. Introduction: communication in spatial design participation

1.1 Research context and identifying gaps in literature

1.1.1 This is not about participation

‘re-evaluation of participation is vital, particularly given a European political context in which ‘participation’ had become a buzzword, but with little thought given to what the word actually meant’

(Blundell Jones et al., 2005, p. xiii)

‘current discourse around listening to children and children’s participation has grave deficiencies and needs reframing’

(Mannion, 2007, p. 405)

Architectural participation, engagement in spatial design, co-design, design collaboration, co-creation of spaces – all these terms are used in practice, policies and literature to describe different forms of what ‘at the level of the lowest common denominator’ Blundell Jones, Petrescu and Till define as ‘the involvement of the user at some stage in the design process’ (Blundell Jones et al., 2005, p. xiii). While the term ‘participation’ is loaded with meaning, widely discussed and frequently criticised for being popularised in the past decades (Cooke and Kothari, 2001; Miessen, 2011; Mohan and Hickey, 2004 to name a few), its actual definition is to this day difficult to coin in theory as well as in practice (Blundell Jones et al., 2005; Cooke and Kothari, 2001; Jenkins and Forsyth, 2010; Miessen, 2011; Mohan and Hickey, 2004). Participation means different things in different contexts, and this fact may present both architects and participants with further challenges (Harriss, 2010).

There are many disputes and challenges surrounding participation within the field of making decisions about space, which exceed the scope of interest of this thesis. One vital aspect of participation, which has perhaps stayed in the background of the more visible discourse, is taken into focus with this research:

the question of how the involved actors communicate and interact with each other. Within the reported growing need for re-definition and re-evaluation of participation, I believe there is space for learning more from experience of involving users in the process of architectural practice.

Children's involvement in the process of architecture and spatial design is most commonly found framed within the literature of children's participation (Adams and Ingham, 1998; Clark, 2010; Clark and Percy-Smith, 2006; Day et al., 2011; Francis and Lorenzo, 2002; Halsey et al., 2006; Lynch, 1977; Rayner et al., 2010; Patsarika, 2011; UNICEF, 1997, and others), more specifically children's participation in decision-making and policy-making (Day et al., 2011; Driskell, 2001; Hill et al., 2004; Tiesdall and Davis, 2004), children's right to have a say about their living environment, about urban planning and living in an urbanised world (Chawla, 2001; Driskell, 2001) and in urban geographies (James and Prout, 1997a; Valentine, 1996, Birch et al., 2017, 2015; Parnell, 2012, 2010), with recent studies exploring children's potential in creative exchange with designers (Birch et al., forthcoming in 2018, 2015, Parnell, 2012, 2010). The many freely accessible manuals, practical advice and how-to guides on 'doing participation' with children (Davey et al., 2010; Davey, 2008; Lyford Jones, 2010), reflect a growing importance and interest in the subject.

Involving children in designing their environments is still uncommon practice in spatial design. However there is an increase in interest in such collaborations, as an overview of recent projects shows (summaries of projects collated in an online database as part of the outputs of the broader research project: Birch et al., 2013). An ethnographic enquiry into designers' experiences shows that such forms of collaboration are perceived to offer many positive outcomes for the participating children, as well as for the designers (Birch et al., 2016a, 2016b).

Review of literature, policies and practice internationally in the field of 'listening to children and children's participation' suggests deficiencies in practice and theory, and authors call for reframing the discourse on the subject (Davey et al., 2010; Clark and Percy-Smith, 2006; Mannion, 2007, p. 405). Much existing research focuses either on methods used or on end products. This thesis seeks to inform the existing discourse by instead helping to describe and understand the process of how children's participation happens in the real world.

The word ‘participation’ is evidently a thematically, politically and even emotionally charged term, widely discussed in various contexts of spatial design and planning. It is not my intention to question the methods, politics, outputs and outcomes of participatory processes I examine through my research. Neither do I examine the term itself. I focus on observing how participants participate in participation, and I adopt various methods of capturing, describing, analysing and interpreting the process in as much detail as possible.

1.1.2 Communication as a situated social activity

At the core of any collaboration is human interaction: the way we communicate with each other, how we talk to one another, and how we listen and react to other people. Following my own experience from practice, as well as reviewing relevant literature, I suggest that a wide array of practices that involve user participation could benefit from becoming more sensitive to the way in which communication happens within the process, regardless of the methods used or ages of participants.

Following existing research on children’s involvement in design framed as ‘a predominantly social activity’ (Ylirisku and Buur, 2007, p. 34), I examine the nature of spatial design process through the lens of ‘multimodal communication in social interaction’ (Craig and Muller, 2007; Davis, 1979; Fish and Scrivener, 1990; Hackett, 2012; Kress and Van Leeuwen, 2001; Peräkylä, 2011; Streeck, 2009; Tulving, 1983). By taking under close inspection how communication happens on a moment-to-moment basis from the viewpoint of what the multimodal ‘utterances’ are designed to achieve in the dialogue, a parallel, or ‘meta’ level of conversation may be revealed (Antaki, 2011a; John Maxwell Atkinson and Heritage, 1984; Goodwin, 1981; Goodwin and Goodwin, 1996; Heritage, 2004a; Sacks, 1995). Like removing a veil represented by the contents of the dialogue, this level of analysis shows signs of what the interlocutors are trying to achieve with the way they are constructing the words, the gestures and how they use physical artefacts. This meta-level of conversation opens up a space where actions of speech are visible, regardless of the theme that is being discussed. I am interested in how designers extend the borders of their own communication by collaborating, talking, discussing, making, and thinking together with child participants.

In my former work in participative spatial design practice, I observed that through collaboration with children, designers are put in a position to read and write space in a slightly different way than they are used to, affected by the child participants' own ways of doing so. With this research I explore and analyse live design projects by focusing on specific types of communication used to communicate ideas and thoughts about space; types of communication where expression is not only verbal, but also tactile, motoric, sensual, visual and most of all, spatial.

Observing and engaging in three live spatial design projects which took place in Germany, Slovenia and the United Kingdom in 2014, the fieldwork adopts qualitative methods to 'collect', or, perhaps in this case more appropriately, 'produce' the main body of empirical data in the light of the research question. Within fieldwork, I aspire to capture in as much detail as much as possible the process of communication as it happens in real life.

1.1.3 Contribution to knowledge

An overview of the field shows certain gaps in literature which offer my research a potential area within which I could contribute to existing knowledge about how practitioners communicate with everyday users of space. Spatial designers involving children in their design processes adopt various different methodologies and approaches (as can be seen from the online database designingwithchildren.net, Birch et al., 2013). All these various approaches can be seen as serving one common purpose – to facilitate communication that is part of the design process. Communication is the common denominator to most, if not all, methodological approaches to participation in design. I add new views of what this specific type of communication, the talk-in-interaction between participants looks like, adding to the understanding of participative design process.

By providing a detailed, almost granular portrayal of communication between designers and children, this thesis examines how the multimodal design encounters offer a space for expressing and negotiating individuals' abilities to express themselves and understand each other.

1.2 Research question and key terms

With this PhD study, I aim to contribute to the understanding of spatial design processes, by creating a portrayal of how communication happens between two different cultures in the context of participative design processes, through the lens of emerging spatial literacies of participants.

The key question driving my research is: ‘How are spatial literacies manifested² and negotiated in interaction between children and designers engaged in spatial design?’

What is the role of verbal utterances, gestures, visual aids, and acts of manipulating³ physical artefacts, when communicating ideas about space? I address this question by describing in as much detail as possible, the ways in which architects and children communicate and construct their talk-in-interaction.

How do spatial literacies emerge through the ways in which designers experience communication with children? I explore this question by experiencing communication first-hand from the position of an observer and from the position of a designer, creating an immersive, evocative narrative to engage the reader.

How do spatial designers create conditions for experiencing specific skills for reading and writing space? The objective is to explore the ways in which the culture of design facilitates participants to experience specific skills for reading and writing space through talk-in-interaction, use of gestures, and manipulation of artefacts.

How are different understandings of reading and writing space negotiated between participants? The objective is to analyse talk-in-interaction, use of gestures, and manipulation of artefacts, to identify emerging patterns of ways in which participants make meaning.

² Manifested in the sense of being ‘enacted’, or ‘done’ in practice (Mol, 2003, p. vii).

³ Manipulating in the sense of handling, physically altering or making new things out of artefacts.

Key terms used in the research questions

Spatial literacy⁴: The skill for reading, interpreting, using, writing and discussing space and spatial features. An innate, embodied ability which is developed and manifested in interaction with the physical world, or through communication with other people.

Talk-in-interaction: Communication in the context of social interaction, including verbal communication, gestures, written signs and symbols, and through the use of physical artefacts.

Spatial designers: spatial design practitioners (architects, landscape architects, interior designers, urban designers, urban planners and other professionals taking an active part in the process of designing spaces of any purpose and on any scale) commissioned on a professional basis to design a space or place or part of it (Parnell, 2012). This broad term is used to envelop any spatial design professionals involved in live design case studies included in this research project.

Spatial design: a situated social process, which aims to design part of physical space or place. Included in this definition is any stage of the design process where there is still opportunity to shape or alter the intended output (Parnell, 2012). Design is here also understood as a culture which follows a specific type of understanding of the world, and ways of knowing (Cross, 1982).

Children: I follow the definition of ‘children’ as human beings under the age of 18 (UN General Assembly, 1989). This broad definition is used to increase the likelihood of identifying appropriate case studies within the given resource and time frame of the doctoral research.

⁴ Used in plural when representing the multitude of spatial literacies as being enacted in the moment by different people.

1.3 Structure of the thesis

SECTION 1: DEFINING KEY INTERESTS AND RESEARCH APPROACH is dedicated to exploring the key interests and the approaches to researching them. ‘Chapter 1 Introduction: communication in spatial design participation’ outlines the wider context of practice and literature within which this research is situated, and where it is positioned in the existing body of knowledge. ‘Chapter 2 Methodology: a combination of approaches’ describes in more detail the research approaches used to address research questions, the methods used for data production and the philosophical assumptions and personal views underpinning my choices of these approaches.

SECTION 2: CONSTRUCTING A THEORETICAL FRAMEWORK outlines how the theoretical framework of ‘spatial literacies’ came together. ‘Chapter 3 Exploring practice: interviews with spatial designers’ is an exploratory analysis of how communication with children is experienced by sixteen design practitioners. In ‘Chapter 4 Field overview: children, designers, communication’ I explore key concepts, locate the topic of interest within the wider field of practice, and define some possible gaps in more detail. Initial interview findings and themes emerging from field overview helped define the focus of the key literature review section, ‘Chapter 5 Theoretical framework: spatial literacies’.

SECTION 3: ANALYSIS, SYNTHESIS AND FINDINGS begins with data analysis in ‘Chapter 6 Live design case studies’. Case studies are introduced, described and analysed following the tradition of ethnography and autoethnography. In the final section I adopt the approach of conversation analysis to explore talk in interaction between children and designers. The analysed elements are discussed and interpreted through the theoretical framework of ‘spatial literacies’ in the context of emerging themes in the following ‘Chapter 7 Key findings: tracing spatial literacies across case studies’. Emerging themes are contextualised within literature and refer back to analysis. In the final ‘Chapter 8 Conclusions’ I look back and reflect on some of the ways this work addresses the research questions and relevant gaps in literature, leading to suggestions for further work. Concluding thoughts critically reflect on the approach to conducting this research as well as its findings, opening up possibilities for further improvement.

2. Methodology: a combination of approaches

2.1 Overview of the methodology

Within this chapter I outline the research design adopted in this thesis, and discuss philosophical and personal assumptions underpinning the decision to combine both different methods and different methodological traditions. I discuss the use of Live Design Case Studies as the research strategy for data production, and discuss finding the right balance between three separate approaches to data analysis: Ethnography, Autoethnography and Conversation Analysis. An overview of qualitative research approaches and methods is accompanied by an account of finding the right balance between them. I aspire to use them in a way that produces a synergy – revealing something more as they would if used on their own.

2.1.1 Philosophical underpinnings

Philosophical assumptions underpinning my research approach are mainly enveloped by the interpretivist and post-structuralist paradigms (Denzin and Lincoln, 2000; Hammond and Wellington, 2013; Maykut and Morehouse, 2001; Neuman, 2014; Walliman, 2006).

The key assumption of interpretivism that all participants as well as the researcher bring their own individual views of the world to research (Mackenzie and Knipe, 2006) allows me to make transparent my reflections as a practitioner-on-hold, and it provides a space for expressing my own voice as a critical researcher-in-the-making. As Denscombe argues, providing a reflexive account of the impact of researcher's identity on research, is one of the ways in which to shed light on objectivity in ethnographic research (2010). I am aware that all stages of conducting this research are influenced by my former education and professional background. So how do I negotiate that in a rigorous context of doctoral research in a way that it not only provides epistemological validity, but also adds more value and richness to the findings? In the background of my mind there is constantly present the question: what influence does my positionality have on research design, interaction with research participants, data production, analysis and interpretation? I bring some transparency into the narrative by

adding a critical reflexive voice, reflecting on how my views may affect what I am looking for in data, and how I interpret and discuss what I choose to focus on.

Following Derrida's post-structuralist discussions, I understand that a multitude of various perspectives affect interpretation of meaning (1978). Knowledge construction in my work depends as much on my writing as on the perceptions of the reader – we both have an impact on the reality that is being created through my research. As Mol argues, we are all actors with individual impacts on not only the perceptions of reality, but the reality itself (Mol, 2003). Reality is not something existing independently 'out there'. It is constantly being 'done' or 'enacted' through practice (Ibid.). This implies a multitude of 'ontologies' which are 'brought into being, sustained, or allowed to wither away in common, day-to-day, sociomaterial practices' (Ibid., p.6). In this sense, even reading and writing space is not something with fixed meaning, but is done and shaped by all involved actors – material and immaterial.

Me as a researcher and a designer – how does it impact my work? Might be that I am over interpreting the context of my choices. Perhaps my analysis is overly informed by the way that I remember designing with child and adult participants when I still worked in practice. In any case it is just undividable – it impacts the whole process of data production, analysis, and interpretation. I need to make it transparent in this research, I need to make my thoughts and reflections visible throughout the thesis.⁵

2.1.2 Epistemological position

Within the broad paradigm of interpretivist and post-structuralist traditions, I also draw on the theory of 'abduction' and 'intuition' in research as a type of reasoning and a valid philosophical argument throughout the research process (Bajc, 2012a; Dunne and Dougherty, 2016; Fann, 1970; Haig, 2005; Kolko, 2010; Lu and Liu, 2012; Magnani, 2005; Mirza et al., 2014; Reichertz, 2016). The starting point of 'abductive reasoning' in data production and analysis strives

⁵ My reflexive voice is presented through excerpts from my journal, denoted in a different font. These reflections appear in places where they directly contribute to my research experiences or as an addition to data description and analysis.

towards observations without presuppositions, and studying phenomena without any particular theory in mind (Reichert, 2016), producing the best explanation of the phenomenon by generating plausible hypotheses and at the same time evaluating them (Magnani, 2005). Abduction, a 'step of adopting a hypothesis as being suggested by the facts, a form of inference,' (Peirce, 1998, p. 95), a type of 'intelligent guessing' (Lu and Liu, 2012, p. 143), can be seen as a kind of constructive thinking placed alongside induction and deduction as the key types of reasoning (Fann, 1970). It includes all operations that happen in the process of arriving at a scientific hypothesis which includes many failed attempts and failing assumptions (Ibid.). Peirce was the first to assume that this type of reasoning is important in research. The outcome is not always guaranteed: as Peirce calls it, 'the security level' of coming to valid assumptions may be low - while the richness and the fruitfulness of ideas is extremely high (Fann, 1970, p. 8). This kind of reasoning, Fann argues, is the core of the 'a-ha' moment of 'getting a new idea' or in the process of 'deciding whether an idea is worth pursuing further' (1970, p.9).

2.1.3 Research design: key stages

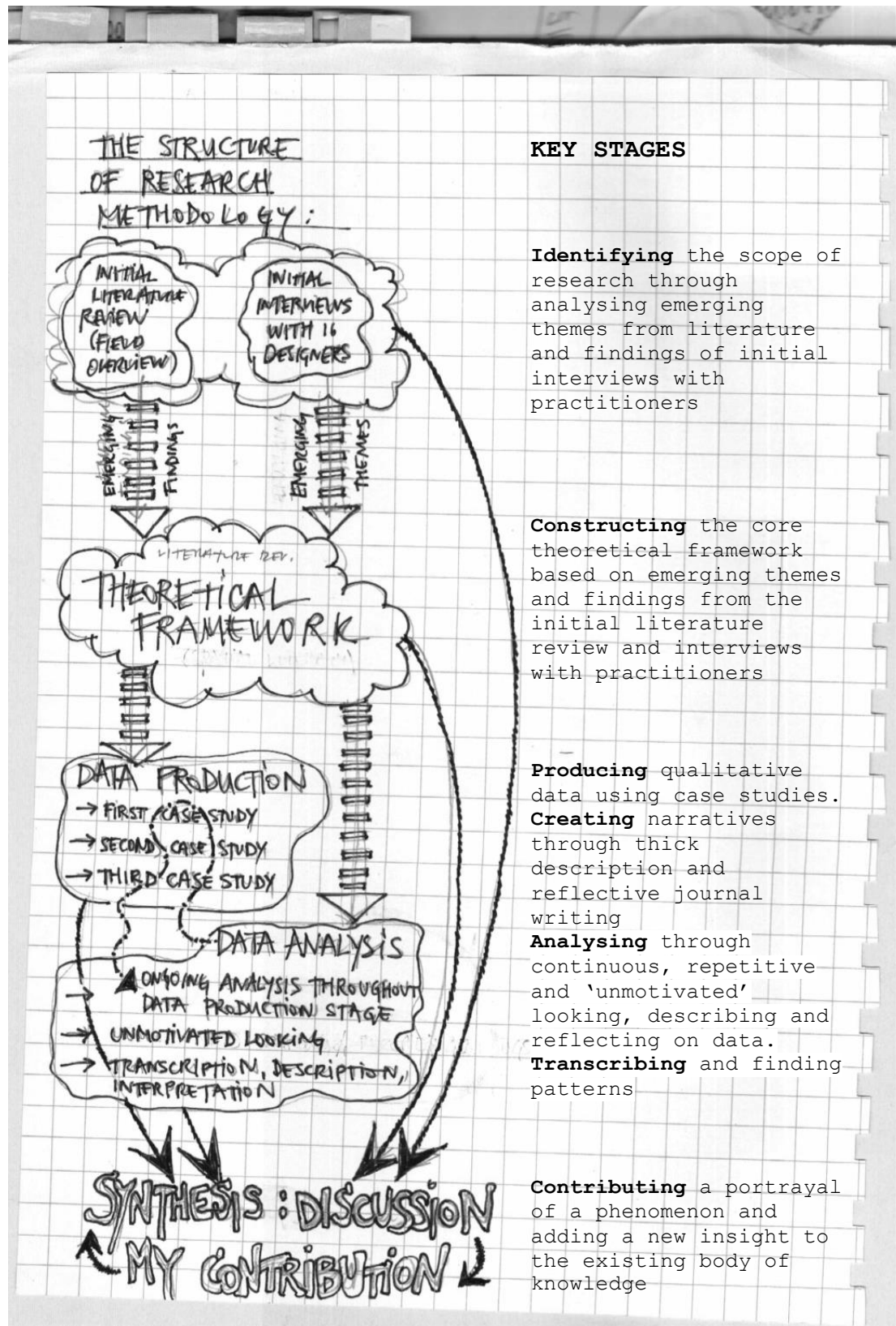


FIGURE 1: THE STRUCTURE OF RESEARCH METHODOLOGY

The structure of the adopted research methodology includes several approaches to recording, describing and analysing child-designer communication (Figure 1).

The first stage in the process involved ‘identifying the scope of research and constructing the core theoretical framework’. The initial literature review, or as I also refer to it as ‘the field overview’, was done by exploring the existing discourse relevant to the broader context that surrounds the phenomenon. In parallel to this review, I also conducted a qualitative analysis of semi-structured interviews with sixteen spatial designers, exploring their first-hand experiences of working with children in design, to help inform the scope of my research (Baker, 2004; Corbin and Strauss, 2008; Creswell, 1998; Denscombe, 2010; Denzin and Lincoln, 2000; Flick, 2009; Glaser and Strauss, 1967; Layder, 1998). The findings and themes that emerged from this first stage of the research allowed me to identify the key research interest and informed the construction of the main theoretical framework.

In the ‘data production’ stage, I was faced with a challenge to find a single research approach that could adequately capture the communication in a design process as it unfolds. Due to the specific characteristics of the studied phenomenon, a combination of approaches was required to explore the research questions. The selected case studies were short lasting, unlike in the case of traditional ethnographic studies. At the level of the larger research project, the choice was therefore made to follow a focused ethnographic approach, producing qualitative data through case studies, in a way that combines several data collection tools (Knoblauch, 2005). The adopted combination of qualitative methods allowed the research project approach to record and later access specific details of the short-lasting phenomenon (Higginbottom et al., 2014; Knoblauch, 2005; Nightingale et al., 2014; Rimi et al., 2016; Wall, 2014). Further on in this chapter I describe the methods in more detail, showing which specific aspects are well suited to my research interests and which aspects caused certain challenges within the process.

Quite often, the borders between ‘data production’, ‘data description’ and ‘data analysis’ stages were blurred, sometimes even non-existent. Some level of data analysis was already in progress as I was producing data during fieldwork. Creating narratives through thick description writing and reflecting on experiences in my journal could also be positioned somewhere on the border between data production and data analysis. In this stage of research, I produced

an ethnographic account of two cases run by other designers, and wrote an autoethnographic reflective narrative in a dual role of a designer and researcher in the third case.

The next step of data analysis I undertook through continuous ‘unmotivated’ looking, describing, categorising, grouping and comparing visual recordings of data (Hutchby, 2008; Jefferson, 2004; Sacks, 1995; Sacks et al., 1974; Schegloff, 2007; Streeck, 2009; Filipi, 2009; Gardner, 1991; Goodwin, 2014; Goodwin and Goodwin, 1987; Have, 2007; Heinemann et al., 2011; Hepburn, 2004; Heritage, 2004a; Jefferson, 2004; Laursen, 2005; Levinson, 2003; Mayall, 2002; Merrills, 2009; Nevile et al., 2014; Seedhouse, 1997; Sikveland and Ogden, 2012; Smith et al., 2015; Tarplee, 2010; Wilkinson and Kitzinger, 2006; Zappavinga et al.). The process of detailed transcription of recorded communication between designers and children was an important part of the analytical stage. It allowed me to immerse myself in the recorded talk-in-interaction, noticing and transcribing the talk, gestures and the use of objects, to nearly granular detail. Transcripts were used to find prevailing patterns in communication.

The specific characteristics of communication in the three selected cases were portrayed through data production and data analysis. In the final stage, the synthesis of this research journey is presented in a form of a discussion of emerging themes in the context of the theoretical framework. This concluding stage stands as the contribution to knowledge, by adding new insight into how communication happens when people’s individual spatial literacies come together in a design process: the culture of children and the culture of designers. It also contributes to the field of literacies, by adding a detailed portrayal of how reading and writing space and spatial representations happens through multimodal media.

2.1.4 Key studies that inspired my approach to data collection and analysis

The methodology was constructed from various research approaches, inspired by selected relevant research projects. The projects described below influenced my methodology because they either share a similar subject focus with my PhD but adopt a different approach, or they adopt relevant methodologies and methods in a context that is different from my own.

Looking at studies on conversations between children and adults in naturally occurring and institutionalised settings helped me clarify and better understand the key terms used in the main research question, and construct working definitions which framed the scope of interest. In 'Literacies across Media', Mackey explores how everyday literacies develop through various types of media and how the skill of reading and writing is developed alongside other people (Mackey, 2002). Her study informed my understanding of literacy as a broad concept which can be extended to quite specific contexts, such as space. Following the research focus of 'spatial literacies', I was inspired by the writing style and the approach to research in the study of literacy educators researching spatial literacy in urban renewal contexts (Comber et al., 2006).

A big influence on how I understand ethnography and transparent self-reflexivity in design process studies came from Yaneva's ethnographic portrayal of the life and work of an architectural design studio 'Made by the Office for Metropolitan Architecture: An Ethnography of Design (Yaneva, 2009b). Ellis' monography 'Autoethnographic Reflections on Life and Work' was my first introduction to the world of autoethnography, and to this day remains one of my favourite works regarding the writing style and the intimate detail of researcher's experiences in social sciences (Ellis, 2009). 'Inclusion and Psychological Intervention in Schools: A Critical Autoethnography' is a study that influenced my views on doing autoethnographic research in educational settings with children (Quicke, 2008). Compared to Ellis' personal narratives focusing on her life and people near to her, Quicke's work portrays his experience in an institutional setting, involving a large number of students and their own life stories.

Conversation Analysis as a method for analysing talk-in-interaction (Goodwin, 1981; Heritage, 2004a; Sacks et al., 1974; Schegloff, 2007; Sidnell, 2010; ten Have, 2007) is not frequently associated with ethnography. I followed some aspects of Moerman's approach to combining ethnography and conversation analysis (1988) especially focusing on his take on how the two complement each other.

And finally, Hackett's work 'Zigging and Zooming All over the Place: Young Children's Meaning Making and Movement in the Museum' influenced how I thought about my dual role in research (Hackett, 2012). Besides being a researcher, I am also a design practitioner and a participant in my own study.

This influence is further explored in the reflexive journal excerpts included throughout.

2.1.5 Learning journal as a vehicle for reflection

'The act of writing is a great stimulus to creativity. When we are grappling with a problem, it is a common occurrence that in writing done our conscious thought on the question, useful associations and new ideas begin to emerge. Writing the immediate thoughts make more 'room' for new avenues of thinking, new possibilities.'

(Miller, 1979, p. 170)

For me, an important knowledge production method is scribbling notes, making hand drawn diagrams, sketching, drawing and sticking things into and cutting stuff out of my reflective journals (Figure 2). They come in a form of notebooks, which are the first and most important records of my training, learning and growing as a researcher. I use them for engaging into conversations with myself, they give me a space for thinking, remembering, and making new connections between the thoughts and ideas that appear during my study process.

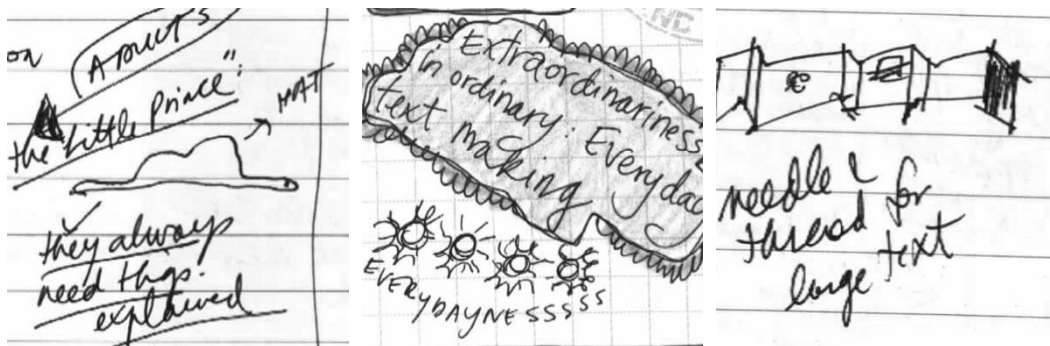


FIGURE 2: REFLECTIVE JOURNAL ENTRY EXAMPLE: WRITING AND SKETCHING

I organise the pages of the notebooks in a way which reserves space for first stage reflections in the narrow column areas adjacent to the main notes (Figure 3). The notes are then revisited at another time, sometimes even years later, and any emerging threads of thought and reflections are added when needed. The combination of the immediate notes from lectures or readings and first stage reflections is shown in Figure 3.

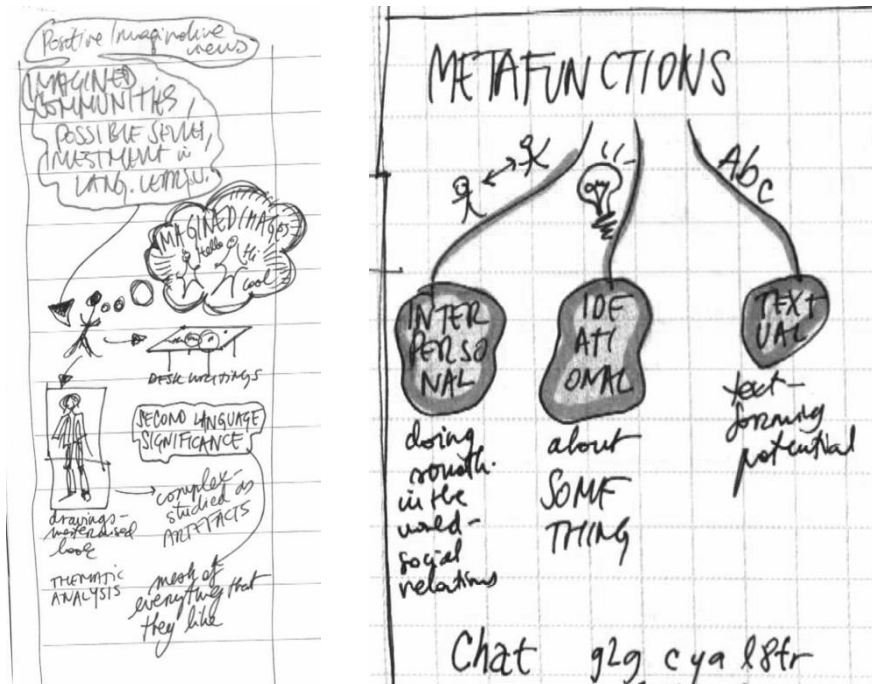


FIGURE 3: NOTES (LEFT) AND FIRST STAGE REFLECTIONS (RIGHT)

What follows when I exit the comfort zone of my sketchbook reflective journal are the ‘second stage reflections’ – using freewriting to weave individual words and sketches into a narrative. Second stage reflections serve me to practice expression through the medium that I am most illiterate in – the medium of the written word. As part of the methodology, I discover and learn the process of writing as a process of encouraging creativity, as a way of thinking, and eventually, as a way of making coherent narratives that would make sense to other people.

24 Methodology: a combination of approaches

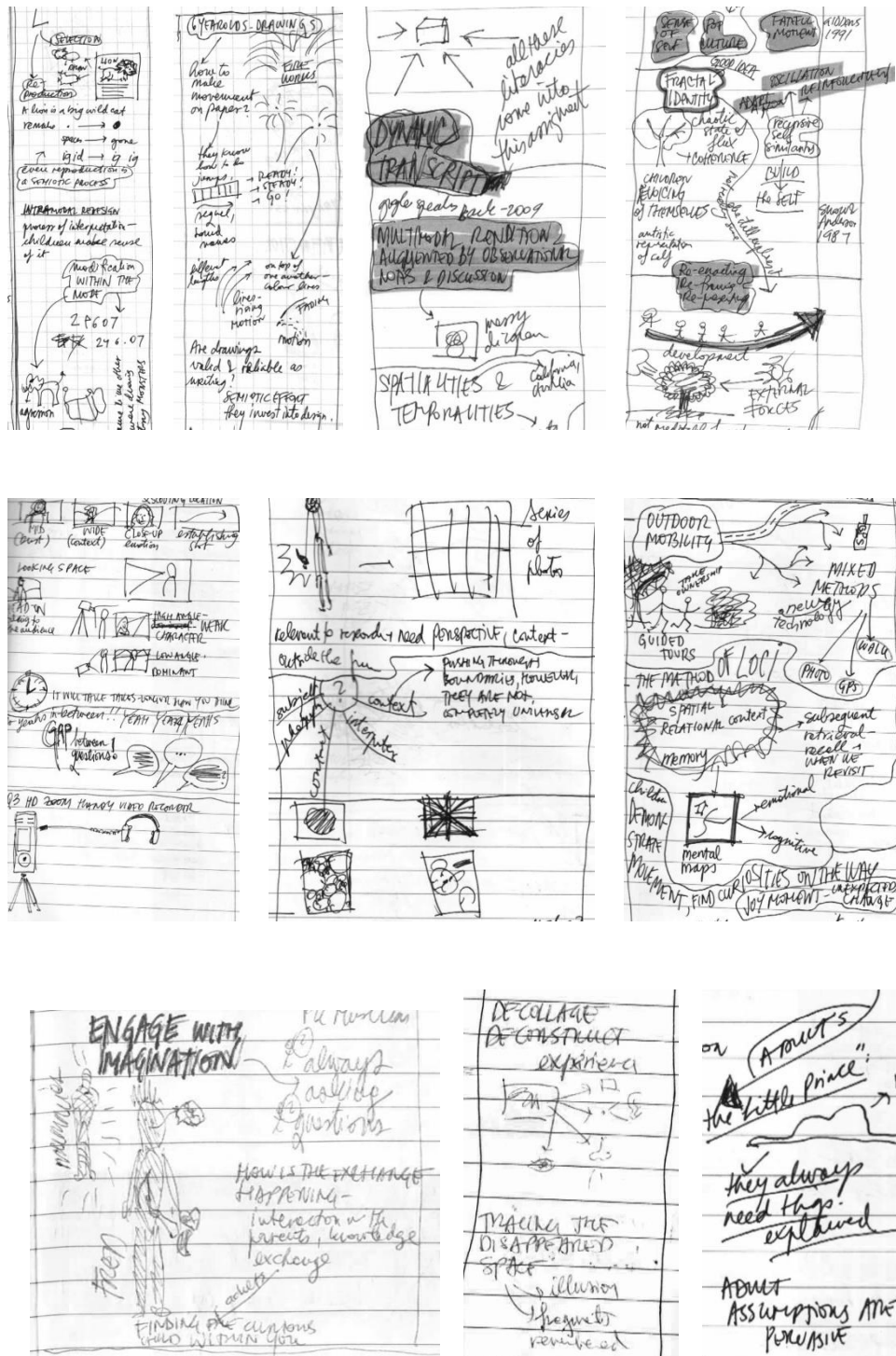


FIGURE 4: REFLECTIVE JOURNAL ENTRY EXAMPLES

2.1.6 PhD methodology in relation to the larger research project

Since all data collection and research methods design was shared with the broader Leverhulme Trust funded research project, it affected the way in which I selected and constructed my own methodology to address the doctoral research question. The research question of my PhD evolved slowly, through the first year of the PhD, in parallel with working on data collection methods, preliminary survey, preliminary readings on the subject, and through discussions with the research team. By the end of the first year, the question reflected my own interests and curiosity about the subject within the larger project. The approach to data analysis in the context of the questions required a mix of approaches, within the case study strategy, set up by the research project (described in more detail in Appendix 4).

The first steps of the PhD, the preliminary interviews with designers and an exploratory review of literature were shared with the research project to help identify and hone the final research question. I departed from these shared grounds to construct my own research question and approach, positioning my research within a combination of analytical methods and theoretical frameworks that are specific to the PhD.

The relationships between the thematic and methodological interrelations between the project and the PhD are shown in Figure 5.

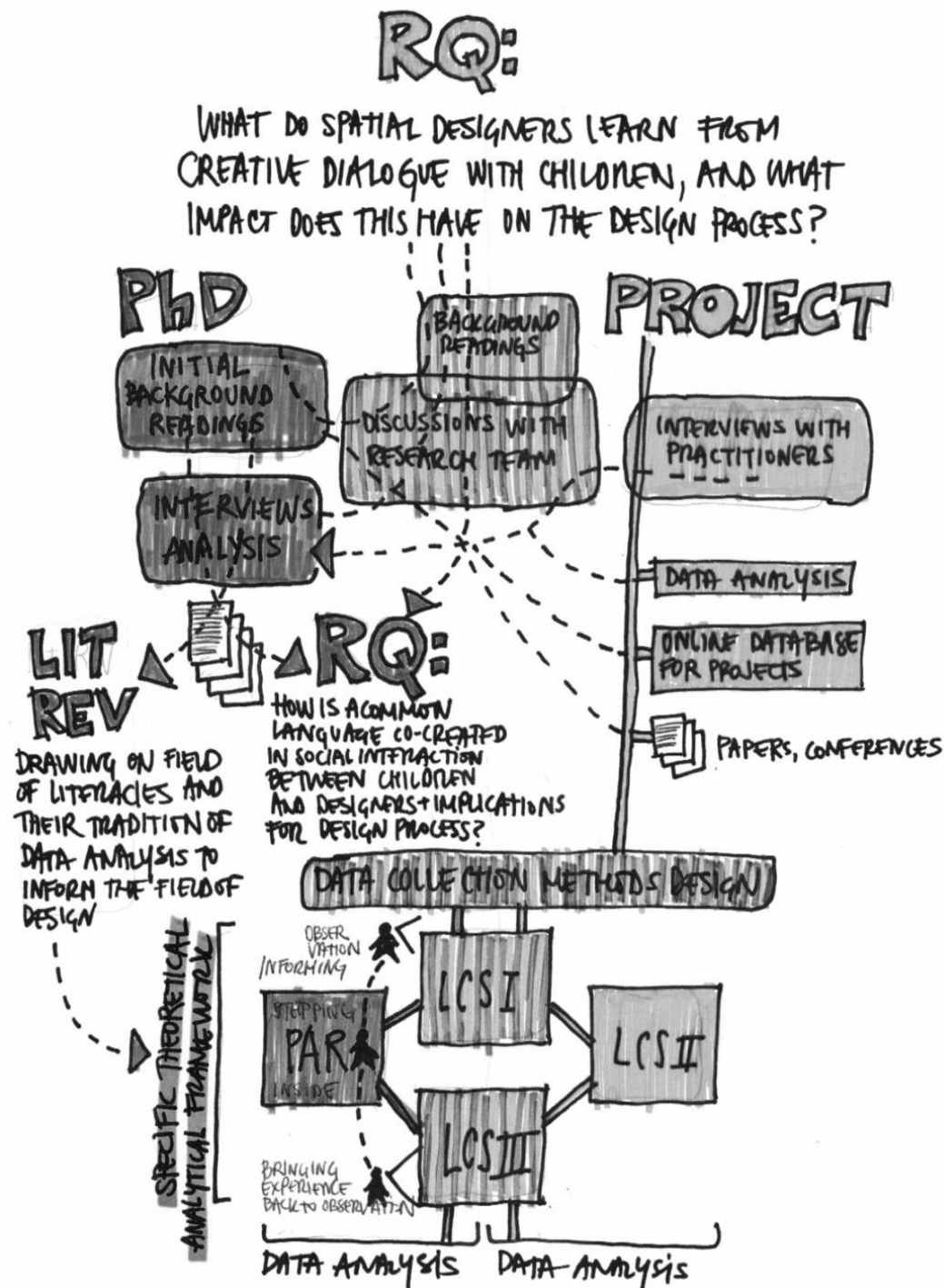


FIGURE 5: PHD METHODOLOGY IN RELATION TO THE LARGER RESEARCH PROJECT

2.2 Identifying the scope of research and constructing the key theoretical framework

My research journey began with one key interest: the communication between children and spatial designers engaged in spatial design process. This interest originated from the nature of the larger research project I am involved in, as well as my long-lasting interest in communication with spatial users.

I see my axiological premise is rooted all the way back in my personal fascination with languages and how people's different understandings of terms, words, or even how they are pronounced or used differently in a conversation, can lead to creating gaps in conversation, which can either lead to misunderstandings or allow new possibilities to emerge. Looking back at my life in Sheffield as a non-native English speaker, a foreign PhD student and a part of an interdisciplinary research team, I now become more aware of how the various notions of translation within a conversation extend the boundaries of understanding. Translation in this sense creates spaces and situations that are very complex and become greater than the act of actions that in return formulate knowledge which is both shared and individual.

This section demonstrates how the scope of the theoretical framework is identified through interviewing practitioners in a qualitative survey, and exploring key terms through an initial literature review. The theoretical framework that emerged from this stage of the methodology was used in the following stages: data production, analysis and synthesis: discussion of findings.

2.2.1 Interviews with designers

Identifying that my own experiences and questions regarding the spatial design process had a big influence on scoping the focus of my research, I found it was important to include other designers' opinions and experiences as part of the methodology. Sixteen spatial design practitioners who all had prior experience

with working with children in a design context, were interviewed as part of the wider research project. The practitioners were interviewed on a one-to-one basis, using a voice recorder for capturing face-to-face or skype-based conversations. The survey was conducted over a five month period during the first year of the PhD (March to August 2013) by research associates Dr Jo Birch, Dr Maria Patsarika and principal investigator on the project Dr Rosie Parnell. The interviewees were selected through the process of contacting the existing network of designers who were known to the research team for doing participative design work with children. Drawing on Corbin and Strauss who argue that the analysis and interpretation of ten in-depth interviews may be sufficient to inform a framework of a theoretical structure (Corbin and Strauss, 2008), the number of 16 interviews was justified for the needs of the preliminary survey.

The main purpose of these qualitative, semi-structured interviews was to find out how the designers experienced creativity and design, and what their specific, personal experiences when working with children had been. The open-ended, semi-structured questions were grouped into three main thematic sections: designers' experiences with creative process, spatial design process, and experiences of including children in spatial design⁶. It is within the latter thematic section (experiences of including children in spatial design) that the themes regarding communication were mostly brought up, and used in my PhD analysis⁷.

After the source data was produced, I followed basic principles of a qualitative analysis process through data coding (Baker, 2004; Corbin and Strauss, 2008; Creswell, 1998; Denscombe, 2010; Denzin and Lincoln, 2000; Reichertz, 2016). Selective coding was focused around the core category, looking for connections within it and ways in which it may be the core subject of the analysis. The core category used for first stage coding process was 'communication', the starting point research focus of this thesis. NVivo coding software was used to identify the codes and open code the data. The prevailing codes were grouped into key thematic clusters using a hand written mind map technique, identifying categories and sub-categories of emerging themes. A post-coding analysis of

⁶ To see an example of interview questions please see Appendix 3: Interviews with practitioners - question guide. For detailed information see Birch et al., 2016a.

⁷ As opposed to the broader qualitative analysis which was done for the needs of the larger project.

themes was used to find interrelations between themes and categories, again using a hand written mind map technique.

The initial results served as a valuable exploration of the field at the time when the research was still in first stages and still open to changes in focus and empirical approach. The emerging themes additionally helped me to define the focus of the review of literature which helped construct the theoretical framework for the main data analysis of live case studies.

2.2.2 Field overview as a basis for identifying the research context

'Ethnographers writing proposals and preparing for fieldwork are reviewing literatures that bear some explicable relevance to the work being planned. All such reviews are iterative: initiating reviews before field entry, starting and stopping throughout data collection, letting go of entire bodies of work, acquiring and picking up others throughout the fieldwork and latter phases. [...] Often one hears about the "literature review" as though there were only one body of literature to review or that one could produce a single such review. We speak instead of "literature reviews" to emphasize both the iterative nature of such readings and the need to read across topics and even disciplines as central research questions get refined during the course of fieldwork.'

(Brice Heath and Street, 2008, pp. 49–50)

The process of constructing the theoretical framework was done throughout the duration of the PhD, and influenced all methodological stages. For me it was an important methodological choice to make explicit the reciprocal, iterative nature of how the theoretical framework influenced my work with data, and how the work with data in return had an impact on revisiting theory.

This methodological step was focused on further identifying the wider context of the phenomenon that interested me. My literature review began at the point when the research question was still in the initial stages of formation. Driven by

the initial area of interest, the specific research focus was still in the process of being established. The stage of constructing a field overview therefore served as an exploration of key concepts surrounding my initial interests. Narrative was kept quite flexible in this part, allowing me to explore freely, to ask further questions and to eventually construct the core theoretical framework. In the stage of refining research questions, scoping the focus of this thesis, and finding its place within the thematic and methodological territory of the larger research project, I began to explore the context of my research interests.

As a starting point, I can only draw on my own experience from participative spatial design practice, where we adopted different methods to initiate dialogue about space: the world café discussions, photo-voice, walks through the area, Gulliver's map and making collages. Even though these methods provide various outputs that are useful and attractive by themselves, the common denominator and the real value behind them is the fact that they promote dialogue, give participants something substantial and material to do, to make, to look at, and to think about. I am by nature not a very good communicator, public presenter or in fact any kind of clear conveyor of my thoughts. These hindrances may be a driving force and source of my curiosity to learn more about communication as a process and how it works when we talk about space.

2.3 Research approach to data production: live design case studies

'a live case study involves a real client with a real issue and a real deadline. The problem is not hypothetical [...]. The environment is 'live' and that is important.'

(Culpin and Scott, 2012, p. 572)

‘Live case study’ investigation was adopted as the overarching qualitative research strategy for creating knowledge. ‘Live’ was here understood to mean both that the processes in each case were ongoing and also, in the context of spatial design, that the selected case projects had been commissioned or arranged with the aim to be built at the end of the process. The fieldwork focused on the part of the live design process when there was direct child-designer involvement.

Three live case studies were selected through a network of practitioners, to fit a given timeframe – the second year of the PhD and the research project. A condition for their selection was that the practice was already established in working with children in spatial design. Another important criterion was for the language used by participants to be one I understand and am capable of communicating in.

2.3.1 Focused ethnography

A spatial design processes may last several months and even years, however an individual session with children within this process may take as little as a couple of hours. The nature of the context required an approach that allowed intensive investigation into a short-term activity. This fit well within the ethnographic research approach described by Knoblauch and followers as ‘focused ethnography’ (Knoblauch, 2005). The approach not only makes transparent the fact that the researcher possesses some knowledge of the context because of the background or professional experience, but allows this fact to become the researcher’s advantage and aids knowledge production by offering valuable specific insights (Wall, 2014). The use of multiple methods during a short period of time allows the researcher to cover different aspects, participants, views and modes of the social interaction in action (Knoblauch, 2005). Adopting this approach, I created first stage impressions by making observations, talking to participants and making ‘traditional’ ethnographic fieldnotes. While I was doing so, the event was being recorded by audio and video devices, located at various viewpoints to cover the happening while I put my attention to another aspect that took place at the same time.

2.3.2 Qualitative methods

‘When ethnographers produce photographs or video, these images, as well as the experience of producing and discussing them, become part of their ethnographic knowledge. Images are indeed part of how we experience, learn and know as well as how we communicate and represent knowledge.’

(Pink, 2013, p. 1)

A combination of visual and qualitative methods was used to help describe, analyse and interpret how the interaction in question was happening. Capturing the multimodal, multivocal and multilayered social communication using qualitative research methods proved to be a challenging task. Video recordings were used to assist an ethnographic ‘thick description’ (Carspecken, 1996) of the design process, to record the interviews with research participants, to record my own researcher’s video-diary, as well as to support communication with participants during the second case study. The fact that the process was recorded on video medium, allowed me to watch and dissect the event as many times as needed. This did not undermine the importance of live observations, experiencing the sense of the research setting in person, and relying on fieldnotes, diary and otherwise recorded impressions to help interpret and analyse video data.

In such a limited amount of time in which the live case study design processes took place, the understanding of the setting proved to be the most challenging task. Given the limited amount of time for experiencing the setting of this ethnographic enquiry, I followed a very intense form of ‘deep immersion’ (Emerson et al., 1995). The immersion in the situation through all senses was recorded in a combination of fieldwork diary writings as described by Punch (2012) and thick ethnographic description as described by Carspecken (1996).

From the beginning I was shaping data production by my own understanding and knowledge about the world, which I brought to research. It was co-shaped by my supervisor, as well as the two researchers with whom experiences and impressions were constantly shared, discussed and negotiated during and

after field study visits. My reality of research settings was constructed by us all. By our presence in design project, we co-shaped the whole process as well. It is therefore impossible to imagine the process as it would have been without us there.

The participants were observed in a natural setting – meaning the event was not set up as an experiment for the primary purpose of carrying out the research. It was however still to some extent a designed event, designed with the purpose of working on a spatial design task, with some set up rules. So my observations could not be labelled as part of the childhood research movement, which investigates children's lives in different aspects in their 'natural setting'. However as James argues, children's relationships and friendships were still 'enacted' through a 'structured process', which gives 'form and meaning' to their lives just the same (James, 1996, p. 314).

Such a combination of approaches allowed me to share qualitative data collection/production tools with the larger research project (described in more detail in Appendix 4), while we kept separate analytical approaches. Parallels can be drawn between my methodology and the ones adopted by designers working with children. Mixed methods allow for covering different aspects of the bigger picture, coming together in a 'mosaic' of approaches (Clark, 2010, 2004).

The table below shows all data produced through focused ethnography and the type of analyses they were used for:

Qualitative data	Analysis
video recordings of live action	factual description of live design case studies
visual images of the process	
visual images of work produced with children	
follow up interviews with designers	
additional visual materials about the design	
fieldnotes	ethnographic thick description
researcher journal	
reflexive diary	
conversations with designers and children	
notebooks, reflective journals, sketchbooks	
video diary	autoethnographic evocative narrative
researcher journal	
reflexive diary	
notebooks: reflective journals, sketchbooks	
video recordings of live action	conversation analysis

2.4 Analysing communication

2.4.1 Introduction to Conversation Analysis: a method for exploring talk-in-interaction

The central sociological insight of CA is that it is through conversation that we conduct the ordinary, and perhaps extraordinary, affairs of our lives. When people talk with one another, they are not merely communicating thoughts, information or knowledge. Our relationships with one another, and our sense of who we are to one another, is generated, manifest, maintained and managed in and through our conversations, whether face-to-face or on the telephone. People construct, establish, reproduce, and negotiate their identities, roles, and relationships in conversational interaction.

(Drew and Heritage, 1992, p. 2)

Conversation Analysis (henceforth referred to as CA) is an analytical tool for examining human talk-in-interaction from the angle of how it is done and what actions it is achieving on a moment-to-moment basis in conversation (Goodwin, 1981; Sacks et al., 1974; Schegloff, 2007; ten Have, 2007). It is a field of studying 'human norms, practices and competences underlying the organization of social interaction' (Drew and Heritage, 1992, p. 1) in everyday situations, as well as 'in medical, educational, mass media and socio-legal contexts, 'monologic' interactions such as lecturing or speech-making, and technologically complex interactions such as web-based multiparty communication' (Ibid., p. 1). In other words, CA looks closely at how people design their speech units (or 'turns') to perform a certain action within the conversation, and how their turns fit to a 'certain range of possible shapes' or patterns emerging from data (Antaki, 2011b, p. 1). Within CA, the term 'conversation' tends to be reserved for interaction between 'peers' (such as family or friends), whereas the term 'talk-in-interaction' is a more general term which covers both conversation and the other kinds of 'institutional interaction' (Drew and Heritage, 1992) which can involve various task- or work-related activities and may involve people in roles which are unequal

in terms of knowledge and power (e.g. ‘professionals’, such as doctors, architects etc.) in interaction with ‘lay persons’ (e.g. patients, clients etc.).

As a research approach, CA was established by Harvey Sacks, Emanuel A. Schegloff, and Gail Jefferson, mainly at the University of California beginning in the 1960s as a reaction to their ‘dissatisfaction with existing methodologies and theories’ of studying the everyday social behaviour (Sidnell and Stivers, 2012, p.1). By the time of writing this thesis, CA has become ‘the dominant approach to the study of human social interaction across disciplines of Sociology, Linguistics and Communication’ (Ibid., p.1).

In normal, naturally occurring interaction, held in everyday life situations, people tend to take turns when speaking. Longer silences and overlaps are mostly considered problematic, with only about five percent of talk under everyday conditions overlapping (Stivers et al., 2009). The basic building block of a turn-taking system is a ‘turn construction unit’, and most commonly every interlocutor gets the right to one unit, with the right to finish it (Sacks et al., 1974). ‘Turn construction units’ can be ‘lexical’ or consisting of one word; ‘phrasal-causal’, which do not consist of a complete sentence but comprise more than one word; or ‘sentential’ or forming a grammatically complete sentence (Ibid.). A ‘turn construction unit’ is complete when it fulfils the action in the context of the conversation sequence.

Interlocutors are constantly monitoring each other’s speech for possible completion points after ‘turn construction units’, which indicate it might be their possibility to enter the dialogue (Sacks et al., 1974). This so called ‘transition relevance point’ is the first point of possible completion of the first ‘turn construction unit’, and it is indicated by grammar, action completion or intonation (Ibid.). At the moment a ‘transition relevance point’ is reached, the next speaker can non-interruptively take over and produce a new ‘turn construction unit’. Alternatively, the same speaker may continue by adding ‘a little bit more’ (grammatically dependent on the prior ‘turn construction unit’, called an ‘increment’: Sacks et al., 1974) or creating a completely new ‘turn construction unit’ (Ibid.). Who becomes the next speaker can be achieved through self-selection, where either the current speaker continues to talk, or another speaker starts to talk by their own choice. Alternatively the next speaker can be selected by the current speaker. This can be done by, for example, a speaker producing an action which makes it relevant for another speaker to produce a

responsive action (e.g. asking someone a question which makes it relevant and expectable that that person will then produce an answer to the question). If there are multiple speakers, the current speaker can allocate the next speaker by gesture, glance or directly addressing a specific person (Ibid.).

An action sequence is mostly constructed of two turns, also called 'adjacency pairs' (Schegloff, 2007). Examples in everyday conversations are, for example, request and refusal or acceptance, question and answer, greeting somebody and greeting back. These 'adjacency pairs' are related to each other by context and action. A typical adjacency pair consists of a 'first pair part' and 'second pair part'; together they form the core mechanism for speakers to follow a sequence that unfolds in conversations.

Institutional interaction can involve systematic differences to the norms of peer conversation in terms of features of interaction such as turn-taking organization or sequence organization (Drew and Heritage, 1992). For example, in educational settings it is very common to find a form of three-turn sequence between teachers and pupils which is rare in peer conversation. This is where the first two parts of the sequence (question by a teacher and answer by the pupil) is followed by the third turn delivered by the teacher, in the form of an evaluation (e.g. 'good', 'that's right', 'no, try again' etc.). This mechanism is described by Sinclair and Coulthard as the 'Initiation-Response-Feedback (IRF)' sequence (Sinclair and Coulthard, 1975), and it is used to describe how teachers and pupils design their talk to perform the actions of 'teacher initiation', 'learner response' and 'teacher follow-up or feedback'. The first turn of such a sequence can typically take the form of 'known answer questions' (Schegloff, 2007), where the teacher asks a question such as 'what time is it' not with the purpose of finding out the time, but to elicit display of knowledge from the pupil (Mehan, 1979). The response is then evaluated by rejection or approval.

In general, authors agree that the social world in which people are located, is created and shaped every moment through communication, and the ways in which the language is used (Atkinson and Heritage, 1984; Heritage, 2004; Jefferson, 2004; Sacks et al., 1974; Schegloff, 2007; Sidnell and Stivers, 2012). This type of analysis is argued to reveal the finer levels of interaction; ones that would in other research traditions go unnoticed (Bucholtz, 2007; Skidmore and Murakami, 2012).

Many stages in designing the built environment depend on effective communication. I think CA may offer a new way of looking at the core of design process, and how the basic rules of conversation are followed or challenged when people bring their own actions to the conversation.

2.4.2 Using CA to analyse data

Different types of institutional interaction have different rules and conventions which will be evident in the distinct forms of interaction (in terms of e.g. the types of actions and sequences produced, and how those actions are designed). In this thesis I explored the specific actions, sequences and forms of actions that designers and children achieved while being involved in design workshops together. Whether talk in interaction occurs in a peer conversation or an institutional setting, the data is collected in the same way – using a video or audio recording device. In the case of my research, the recorded interactions were naturally occurring: they would take place even if they were not being recorded.

The next step was to repeatedly watch the recordings, while I looked for emerging, data-driven patterns, unmotivated by a starting hypothesis (Sidnell, 2012). This ‘unmotivated looking’ at the data is very broad during the early analytical process, following only the general scope of the key research question (Ibid.). Eventually I was able to identify what appeared to be ‘normal’ for this specific type of communication, and to highlight some abnormalities or departures from the identified rules. Through analysis, I focused on what ‘action’ the talk was doing within the interaction (Goodwin, 1981; Sacks et al., 1974; ten Have, 2007). After this long lasting, intensive stage of watching the data, I extracted patterns from similar collections of examples (ten Have, 2007), focusing on how designers and children designed their turns in specific ways, using physical objects and gestures in combination with talk.

Transcription of the video recorded data was an important part of analysis. Bucholtz argues that it should not be written mechanically, but should be considered as a creative way to explore the data in different ways (2007). I used the lengthy process of transcription to look at my data in great detail, being forced to notice the subtle nuances that would have escaped my attention otherwise. I placed specific focus on how objects and gestures supported the

various types of talk. The analysis focused on the verbal as well as the other multimodal aspects of communication, recorded in my data.

While the traditional transcription system adopted by CA (Jefferson, 2004) offers transcription symbols to denote body gestures, it does not focus on visual notation of manipulating objects. Since in this thesis a large emphasis was given to the role of physical objects in combination with gestures and handling/manipulating artefacts, I drew on the work of some research studies which combined the approach of CA with gestures and manipulation of objects (Fasulo and Monzoni, 2009; Heinemann et al., 2011; Streeck, 2009, 1996), to understand different possible approaches to transcription and representation of such data. Also drawing on a wider body of literature which deals with transcribing gestures (Filipi, 2009; Hepburn, 2004; Laursen, 2005; Sikveland and Ogden, 2012; Streeck, 2009; Zappavinga et al., 2010), human movement and motion (Barbacci, 2002; Davis, 1979; Laban, 1975) and approaches to including artefacts and materiality into transcription (Nevile et al., 2014), I adopted my own form of data representation. The transcriptions are accompanied by visual representation that best suits the needs of my interests: to encompass both gesture and objects in a way understandable to readers and aiding analysis. This was done by using video stills, zoomed into the gesture or action relevant for the data analysis.

Nonverbal communication research focusing on gestures relies on transcription or notation of gestures and movement, and many systems have been developed in various areas of study. Perhaps the most detailed system originates from the field of dance, and is widely applied to non-dance areas such as sport sciences, cinematography, theatre and behavioural research (Davis, 1979). Hungarian choreographer Rudolf van Laban invented his own dance movement notation system, called 'Labanotation' (Laban, 1984, 1975). The specific characteristic of this notation system is that it does not describe the actions or intentions of the actors, such as 'reaching out to pick up something' or 'waving at somebody'; it focuses on the fine details of movement as in a process, therefore focusing on how the body and its parts move in space and time (Ibid.). Studies looking at gestures as used in interactional settings, adopted their systems of annotation to 'aid the analysis of specific gesture types in relation to specific social actions' (Gorisch, 2012, p. 45), simplifying the annotation for the needs of research, in this case

isolating the gesture and relating it to the context and the ways in which it is understood by the recipient.

They range from simple descriptions of certain actions, positioned in parallel to transcribed talk, to using photography or video stills, or even detailed pictorial representations of the gesture accompanied by graphical analytical symbols as shown in Figure 6 (Fasulo and Monzoni, 2009; Streeck, 2009, p. 365).

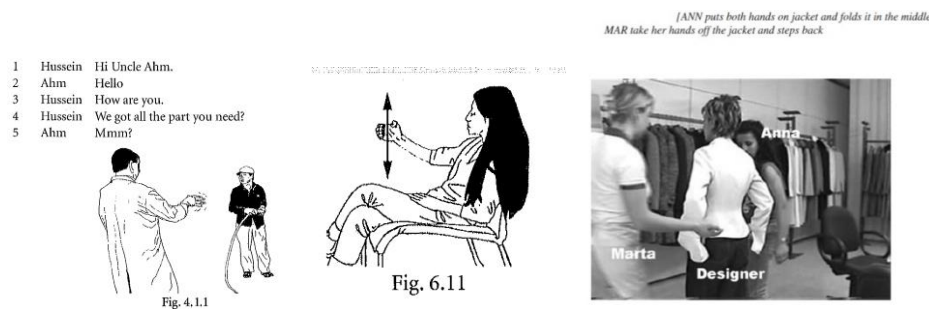


FIGURE 6: EXAMPLES OF GESTURE TRANSCRIPTION

‘Applied conversation analysis’ is a strand of CA, which focuses on a specific profession or conversation-based service with the intention to learn more about the communication aspects of a certain practice (Antaki, 2011a; Peräkylä, 2011), with the aim of its findings to be used in real-world applications to work in social institutions (Robinson and Heritage, 2014). The approach of ‘applied CA’ aims to look for some distinctive aspects of recorded interactions; unveiling how they may be different to peer interactions or to other ‘institutional’ interactions. The research presented in this thesis focuses specifically on the unique aspects and qualities of talk between designers and children, in a specific professional setting of naturally occurring interactions while designing spaces. I am interested in how the two cultures of participants – children and the designers – come together and use their talk in various ways as a part of the activities they are engaged in together. I explore aspects of how architects communicate when designing with participants (here, children), and how they shape their own communication in response to achieve various actions like negotiation, challenging, accepting, refusing, etc.

2.4.3 Ethnography and Autoethnography: tools for creating a rich context for talk-in-interaction

'Ethnography is a craft which is learned through trial and error and honed to the interests, talents, skills, and approaches of each individual scholar'

(Bajc, 2013, p. 1).

I adopted the approach of ethnography to set the broader scene and describe the observed designer-child interactions in detail, as I was engaged in each live design case study in a different way: as a researcher/interviewer in the first case study in Germany, and as an observing researcher in the third case study in the United Kingdom. In the second case study undertaken in Slovenia, I was engaged in the design process as a landscape architect, a facilitator and a researcher. In this case, I adopted the approach of autoethnography to record, reflect on and understand my own personal experience of interactions with children during a spatial design workshop. I drew on these ethnographic and autoethnographic descriptions when discussing emerging themes and positioning them in relation to concepts from existing theory (Ellis, 2009).

In my work I follow five main criteria for constructing ethnographic and autoethnographic narratives as summarised from Richardson (2000). He outlines these criteria in order to keep high, rigorous standards to ethnography, stating that research should aim to add a substantive contribution to the greater understanding of social life; it should follow aesthetic, creative analytical practices that invite interpretive responses from the readers; it should include the writer's reflexivity on issues such as gathering information, data production and analysis ethics and self-awareness in the research process; it has to have impact on the reader (emotional, intellectual, evocative, inspiring, raising questions); and it should embody a sense of real, lived experience (Richardson, 2000, p. 254).

The ethnographic voice I adopted in the first and the third case study, was composed as a reflexive, first person narrative, following the style of ethnographic focus shift from 'participant observation', to 'observation of participation' as

described by Tedlock (2000, 1991). The shift, he argues, originates from the epistemological doubts caused by the challenges of representation, and the 'changing composition of those who become ethnographers, with more women, working class, ethnic and racial groups, gay, lesbian, transgender and third-world scholars now represented' (Bochner and Ellis, 2016, p. 167). Ellis and Bochner describe this type of voice as an 'interpretive, creative, and artistic ethnographic mode' (Ibid, p. 165), which allows the writing to emerge from personal experience, and to connect with the reader on a more personal level (Ibid.).

'Autoethnographers commit to being observers of not only their internal states but also of interactions, social groups, and the culture they are part of. In their research, some autoethnographers focus on the study of others, though they might include themselves as characters [...]. Moreover, many autoethnographers incorporate traditional analysis in their stories.'

(Bochner and Ellis, 2016, p. 166)

With autoethnography adopted in the second case study, I aspired to create a similar narrative to the ethnographic one adopted in the first and the third case study. As argued by scholars from the tradition of autoethnography, the use of self-reflective space linked to the broader social context enriches the representation and reflexivity of the qualitative research focus (see Ellis, 2009; Ellis and Bochner, 2013, 1996; Humphreys, 2005). Such an approach allows the reader to experience the described events more deeply through finding parallels with and reflecting on one's own experience, whilst at the same time keeping a critical distance to the researcher's descriptions (Humphreys, 2005). 'Traditional' ethnography focuses on the participants' experiences of real life and the studied phenomenon (Ellis, 2009), whilst autoethnography creates a space for an in-depth journey into the researcher's own experiences. I found that particular quality of autoethnographic approach extremely useful to document my dual role as a designer and a researcher. These reflections are positioned within theoretical concepts, to help explain a social phenomenon.

The data I created throughout the autoethnographic data production process included my field notes, video diaries, blog entries, designer journal, personal

researcher's journal (Punch, 2012), and the photos of the process created for personal recollection of events. My autoethnographic journey into the experience of talking with children followed many elements of a short-term in-depth focused ethnography (for example Knoblauch, 2005; Wall, 2014 - see Methodological chapter for more detail), as it only examined four events that last 90 minutes each.

The structure of workshops as well as communication and design methods used in the spatial design process was developed collaboratively between my fellow landscape architect Urška Kranjc, a colleague architect Andreja Štrukelj, film director Martin Turk and myself. Using a video medium to record different forms and modes of language that emerge when thinking and talking about space, seemed like the most versatile and practical method to begin a design process. Simple shockproof, waterproof and dirtproof digital cameras were used by children to allow free movement in space, and ease of use. To start a design conversation between designers and children, coloured duct tapes were used to spatially depict both children's and designer's understandings of each other's ideas. These conversations and negotiations in space were also recorded by children. Drawing, collage and model-making methods were used to visually discuss proposals, negotiating shape, function and size of proposed ideas.

I wanted to keep the methods open and flexible enough because of so many unknowns, the number of participating children, the weather, practicality and functionality of the equipment, and the competencies of children. An interview with the other designers was established in a relaxed social setting as a 'closure conversation', where I used designer journals as prompts to get the conversation started. The interview informed my narrative of auto-ethnographic thick description of events just as much as the rest of the data.

Actually, direct transcripts of my video diaries serve really well as the core, in-the-moment data now that I am writing up my autoethnography. Listening to the recordings makes it possible for me to access those experiences and emotions in my mind, and to position them into a narrative representation of how I had experienced the communication with children. This I am writing in an in-the-moment style, and I use a different font to the rest of the analysis,

which is based on my reflections from the viewpoint of a different and more experienced me that I am today.

The themes for ethnographic and autoethnographic narratives have been selected through the help of intuition and the process of abduction (Bajc, 2012b; Coffey, 1999; Haig, 2005; Magnani, 2005; Pink, 2015; Procter, 2013). Both in ethnographic and autoethnographic case study descriptions I used a first person narrative, enriched with many details and descriptions of my reflections as well as emotional reactions to events. I aimed to achieve an immersive experience, which will hopefully resonate with the reader on some level. I framed the narrative in a style that invites the reader to imagine not only how the events, places and people looked, but also how it might make a person feel when in such a situation. These stories may not resonate because of the nature of encountered events, but because they evoke a certain feeling, which allows the reader to immerse themselves in imagining themselves in a similar position (Ellis, 2009). The focus of the narratives is not 'a realist perspective that tries to represent what happened from a distanced, nonbiased view' (Ibid., p.165-166), but to portray an evocative story, including my own critical and transgressive thoughts where appropriate (Bochner and Ellis, 2016; Denzin, 2014; Van Maanen, 1988).

2.4.4 Discussion on analysing communication: pairing ethnography and autoethnography with conversation analysis

'Different disciplinary uses of ethnography are likely to situate it differently within their processes of research and representation by drawing from ethnographic and other approaches to varying extents.'

(Pink, 2013, p. 18)

There is little evidence of research examples combining ethnography and CA. They are however compatible analytical approaches in a number of ways, and used in combination they potentially offer greater insight into the designer-

children interactions analysed here than either might do in isolation. I decided to use ethnography in combination with CA because each helped me address my research question in a way that unfolds a specific angle of looking at the data. Together, these two approaches revealed more than individually, and due to their methodological similarities, they formed a specific synergy that shed a new light on my data. Both approaches are driven by data, which is collected in natural settings, with the intention to better understand the participants' worlds. The approach to interpretation and analysis is in both cases emergent, and drawn by 'unmotivated looking'.

The ethnographic contribution provided a rich context and the first data analysis stage, allowing the emergent themes to be explored in more detail. During fieldwork I realised that thinking about the research question, setting up methods, gathering data and arranging data has already started and contributed to the analytical process. Pink argues that in a contemporary context, there is no clear boundary between data collection and data analysis (2013). In her work, she described how 'research, analysis and storage can thus overlap: materially, digitally, socially and temporally' (Pink, 2013, p. 143). She draws on authors such as Burgess, Hammersley and Atkinson, who argue that 'analysis continues throughout the whole process of ethnographic research' (Pink, 2013, p. 143).

CA on the other hand, allowed a more in-depth analysis of the actual recorded dialogues, looking at how speech and other communicative acts are being designed. The final discussion of this thesis positions the emerging themes within the theoretical framework of 'spatial literacy', through finding meeting points and connections between ethnography and conversation analysis.

In any given moment we have the option of going for a large number of possible responses. But we go for one. What in that moment influences us to go for that one response is very hard to show or examine. Even we don't know why we say it or do it. But looking back, there are always many more answers that we could have come up with. So instead of trying to see and prove why something has been said in that exact moment, this research shows how it is said, and how it is done in relation to other participants in a conversation.

2.4.5 Using the theoretical framework as a lens for interpretation and analysis

The theoretical framework of ‘spatial literacies’ is in my thesis adopted as a theoretical lens to help understand more the specific aspects of communication in participative design processes. Examining the Live Design Case Studies with Ethnographic, Autoethnographic and Conversation Analytic approaches from the point of view of a certain theoretical construct, helps me describe, contextualise, and make sense of the data from a very specific viewpoint. Zooming into the significant extracts, the theory is adopted to aid analysis, so that the analysis is underpinned by a specific theoretical framework. Apart from the potential contribution to practice, the contribution to knowledge emerges from looking at spatial design from a new perspective and therefore shedding new light on the process.

A cross-disciplinary framework of literacies is adopted in this research to examine children’s participation in spatial design process, looking at how shared ‘spatial literacies’ are developed in the process of design. I choose to frame my research within theories from other disciplines, and apply them to the context of spatial design. Departing on the journey of data collection and analysis, it is important to remind myself and the reader of the fact that I am not an expert in these disciplines. Leaving the comfortable domain of spatial design and exploring the disciplines of languages and literacy, is my way of learning new lessons about the architectural design process.

SECTION 2: CONSTRUCTING A THEORETICAL FRAMEWORK

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3. Exploring practice: interviews with spatial designers

This section describes and discusses the themes emerging from a series of interviews (done within the overarching research project) with 16 spatial design practitioners who had prior experience of working directly with children. The method, interview questions and aims are described in more detail in the methodology chapter, and the question guide can be found in Appendix 3.

These preliminary interviews serve as an additional source of information – alongside literature – to inform the context of this study. Through analysis I explore practitioners' perspectives and criticisms of some of the issues raised by my initial research interests. The findings, as well as the process of analysis itself, informed my decisions to the scope of interest of my research.

The emergent interview findings serve as pointers to designing the fieldwork focus and methods, and help form an idea of what to expect in case studies. Figure 7 shows a diagram of connections between the key themes, which were the basis for qualitative analysis.

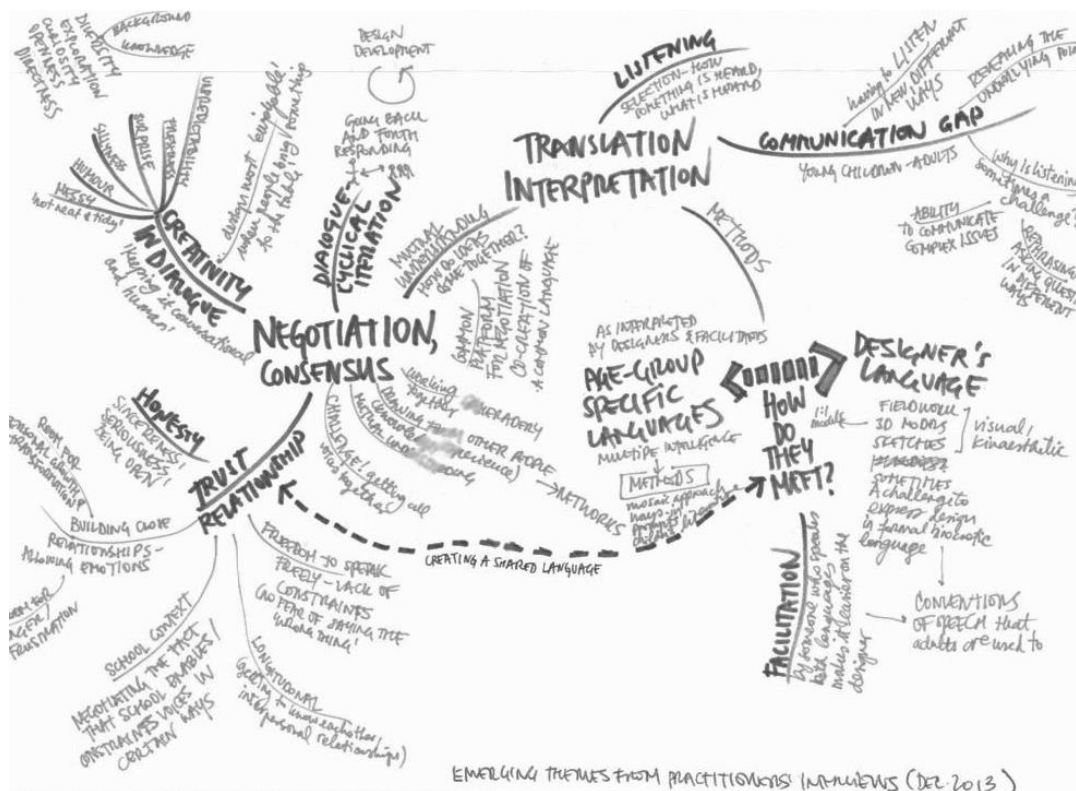


FIGURE 7: EMERGING FINDINGS FROM PRACTITIONERS' INTERVIEWS

3.1 Key themes

3.1.1 Building trust

According to spatial design practitioners, one of the key elements of establishing successful communication with children is building trust. This theme emerged through many interviews, where designers shared their stories that show children's need to feel comfortable, to be able to speak freely, to communicate ideas without fear, to be able to say things with confidence. Drawing on Young's definition of 'discursive practice', creating a mutual understanding comes together with building mutual trust in social interaction (Young, 2008, p. 55).

*'The thing that amazes me very often is the confidence that these young people get when they feel they've been involved in something different, they've learnt something new, not that they even know they're learning something new but their ability to communicate just flourishes.'*⁸ (Int. G, f.)⁹

Another architect feels that honesty, being open and sincere is one of the aspects to overcome the '*feeling of slight disconnection*' (Int. B, m.) in communication with children. Letting the children know the details about the project, the clear and exact intentions and the scope of the project, explaining what the designer does and what their profession is like, may also serve as a '*familiarisation*' process:

'I would call that familiarisation, where you're just talking to them about what I do as a landscape architect, what is landscape architecture, why I think it's important, so I'm trying to familiarise them with the discipline.' (Int. I, f.)

⁸ A general rule applied to all transcriptions: wherever irrelevant to the meaning or the expressive value, phrases like 'yeah', 'sort of', 'more like', 'kind of', 'I guess', 'you know', 'erm' and any repetitive words are omitted from the transcribed quotes. Parts of the sentences which are not directly related to the meaning of the quote are replaced by the symbol [...].

⁹ Interviewee G, female (anonymising abbreviations used throughout this section).

Mutual respect has to be earned, but may be again quickly lost when trying to patronise and talk down to the children, as another interviewee points out:

'If you patronise them they'll spot it in thirty seconds, [laughs] just, if you talk down to them and, and assume that they don't have a brain they'll spot you in less than thirty seconds.' (Int. O, m.)

Building a trust relationship between children and designers takes time, so the time scale of the project may make a difference. Practitioners who have worked on both short-term and long-term projects have said that communication developed much stronger within the longitudinal projects.

'In other projects I haven't had enough time to do, you go into a classroom, you spend an afternoon with them, you can't do fieldwork. You need a proper length of time to do it properly.' (Int. I, f.)

Building relationships on trust may bring along a certain level of freedom to express emotions. Even though experiencing anger or frustration from the participants may be difficult to handle by some designers and teachers, one designer personally values the importance of being free to express all kinds of feelings throughout the process.

'There's a lot of emotional work that goes into that and if you're wanting to work in quite an honest way you allow room for anger and frustration [...] but it takes a lot of energy and I don't think that way of working would work for everybody [...] I like things to feel a little bit real and that people can convey what they need to convey, and not feel that that will be disregarded.' (Int. H, f.)

She points out that authentic participation involves all types of emotions and that the romantic vision of working with children does not necessarily reflect the reality of genuine involvement. This 'turbulent' way of work may not be suited for anyone, she points out:

'There's quite a romantic vision of participation that's kind of out there and research with children which is really lovely and I think that if it's going to be authentic then it should be turbulent, otherwise something's not quite right there, for me anyway, but it's very difficult working in way which is turbulent.' (Int. H, f.)

Before the trust is established, another designer finds, it may be a challenge to get the participants to overcome shyness of talking to strangers:

'What we find with children is they're very reluctant to go out of their comfort zone, they're very shy, when people with baldy heads and speaking with different accents come into their school, they're not their teachers and start talking about architecture.' (Int. M, m.)

Most of the projects described in interviews took place in institutional settings, mostly primary and secondary schools. The presence of teachers or youth workers established specific circumstances of familiarity, while at the same time they created conditions under which the children's voices were enabled in certain ways. In order to establish trust, some designers found they had to make clear what their intentions were and how they were different from those of the teachers.

'Doing that in a school context is particularly hard when there's expectations on what an adult child relationship should look like and what productivity looks like ... and especially for this project, which was school based, [...] is thinking about how to listen in a school context because it's not just about me and my practice but I'm in a place that constrains or enables children's voices in a particular way, so how do I negotiate that?' (Int. H, f.)

'I've had to slap down the teacher, not literally but you know, kid will be saying ooh I think this and teacher, just catch them in the background and they go, no, no, no, you can't do that and actually yes you can, you do it and you kind of feel you're enabling them to be a bit freer, and I

think actually that's where I get really sad in the engagement of schools because I just feel that there's a prescribed route to learning and we're going in to completely blow that open and we don't expect any prescribed route.' (Int. N, m.)

In some cases, the designers even talked of examples where the design process encouraged pupils who were less engaged in school work to be more expressive through means of expression that may perhaps be neglected in educational routines. Interviewees mentioned a number of examples of their amazement over these 'troublesome' students, coming to life and becoming extremely engaged and cooperative.

'That is really interesting because you do a session with a class and often the teacher might point out some potentially troublesome, some more difficult or challenging students and they're invariably lads. And you do something that's different, that's about making a building and something that's more practical and it tends to be the case that those students can respond in a completely different way, and I think that's quite interesting through the kind of making and building process that you do, there's something about the architecture process that exposes and explores such a range of skills that. [...] It's quite nice working with young people because it allows them to see in one project that people have different skills.' (Int. J, m.)

3.1.2 Methods used to find ways into children's worlds

There are many different approaches to engaging children into design process, and every project described by the practitioners is unique. The prevailing methods involve the children using visual aids such as drawings, sketches, collages, map making or photography to articulate their priorities in space.

'When they're drawing they are translating and prioritising because they're identifying things that are important to them.' (Int. I, f.)

'The secondary school pupils were really good at photographing what they liked and disliked and getting them to articulate. That really works for a lot of young people.' (Int. G, f.)

Using objects and exploring the site through using artefacts are two methods mentioned by designers, which use prompts to explore the environment:

'I brought in lots of random objects and just used them as prompts with the children to talk about creativity.' (Int. H, f.)

'We went out into the landscape with small mirrors and we recorded them, where they would place the mirrors, these various other things and then there's a really important time of reflection on the fieldwork.' (Int. I, f.)

Discussing spatial experiences on a level of sensations, and how the places makes someone feel within it, is used by another practitioner for creating a common platform for communication:

'You have to talk to them on the level of sensations, for me the atmosphere is the key communication because they know as we know quite easily and fast I like the space or I don't, and use architecture to find out why.' (Int. C, f.)

The following quote illustrates how students from a secondary school communicated their voices through filling out questionnaires, which may be seen as a form of indirect communication. Even though there was no direct contact between the designer and the students, this particular practitioner thought it provided a valuable insight for the process.

'The responses are brilliant, and absolutely amazing so while there hasn't been that personal kind of interaction there's been a different kind of interaction which has been really very relevant to the process.' (Int. G, f.)

Playing with words and using uncommon words was adopted by one practitioner as a way to describe spaces:

‘They had lots of words that they could draw on, like “bumpy” or quite unusual words which you wouldn’t normally use for describing a space, like spikey.’ (Int. H, f.)

Another interviewee preferred engaging younger children through activities and not focusing so much on verbal communication. Making things together, she said, may help overcome the communication gap and reveal the underlying points perhaps not coming out clearly through spoken language:

‘Doing things with younger children really helps enable collaboration, so making models, playing games, making mood boards, all of that really helps, what is a hindrance is just talking at them, because I don’t think that works at all.’ (Int. G, f.)

Many other designers also adopted various types of hands-on activities such as taking tours, making, building large models, all with the intention of children imagining the types of spaces they would enjoy inhabiting and using for a specific space that is being designed.

‘I think young people particularly really enjoy making things, and building things, that sort of messiness to it, getting your hands dirty, trying things, something that they really enjoy and particularly boys.’ (Int. J, m.)

‘Techniques that I really enjoy as well are kind of building on a one to one scale with kind of found objects and through doing that, it’s very playful but you can also very quickly change the feel of the space by hanging up some fabric [...] it enables children to speak tangibly about the effect that space has upon how they’re feeling because they can make these changes very quickly whilst they’re experiencing them.’ (Int. H, f.)

When working with children, many designers put more emphasis on using visual and 3D methods to communicate design, which they found worked best when working with adult clients as well. Some interviewees later felt that it may be wrong to assume that simply because the clients are adults, they will automatically understand architectural and technical drawings. Many practitioners felt they learn something new about the process of design through working with children – lessons that affected their way of working with participants of any age.

'[...] especially realising that the vast majority of people, kids and adults included, aren't necessarily that comfortable reading standard architectural drawings and we need to find other ways of explaining things and other ways of talking about things.' (Int. F, f.)

'So that could be anybody of any age, [a person understanding] a model because everybody can see it in 3D, you actually get colour and texture from it, you can move it around and squint in the door.' (Int. O, m.)

'Whoever you're working with, I think that physical model making is the key to collaborative working, collaborative making and designing.' (Int. J, m.)

Finally, one of the designers found it useful to explore the visual, audio and kinaesthetic types of learning in order to inform his selection of methods and transform his practice when working with clients of any age:

'That's made me aware of [what] you might need to structure an engagement session with lots of different approaches so that we'll cover quite a broad range of different learners.' (Int. B, m.)

3.1.3 Negotiating different voices

Throughout the interviews there is a theme regarding the fact that space is a limited resource, which may cause tensions when different opinions are

confronted. One designer expressed she found it challenging to navigate all participants' voices, especially in cases where there were large groups involved, and their voices were changing:

'When you're trying to get to one solution because there's lots of different voices, and voices are often momentary and change and shift and what can be challenging is finding ways to be responsive but also guide the project so that it has a coherence.' (Int. H, f.)

A collaborative process of filtering ideas amongst the group of children was described by one interviewee. She described her experience with negotiating the priorities until the final consensus is found and presented to the larger group.

'[They worked] in pairs but then they worked with another three sets of pairs to go well what are the priority in all of these? And then that bigger group went to another bigger group until we filtered it right down.' (Int. H, f.)

Negotiation of different views should be kept *'conversational and human'*, according to one designer:

'It's quite good when someone says something silly, be it adult or child and everyone kind of pokes around and goes why's that silly? Because they didn't think it was silly when they said it and then actually everyone goes oh well maybe it's not so silly, so you need to keep it conversational and human.' (Int. O, m.)

In order to avoid empty expectations, it has to be made clear that what is being discussed is leading towards a common design solution, and that some voices will not be manifested directly. It is really important for children to understand why that is, so they do not feel sceptical towards the design process, an interviewee pointed out:

'Children that I've worked with have been sceptical of a design process, some children who are seven who have gone "well, it won't really be this will it? It won't be about me and my ideas." And those questions need serious talking about honesty, it's going to be a negotiation between you and me and the other people that are involved.' (Int. H, f.)

Negotiating and reaching a consensus was also described as a 'loop' of going back and forth from ideas to the brief, as well as going back to the office and returning to the participants with a design proposal, ready for their comments. One of the interviewees compared the 'loop' to be more like a 'spiral', because the project becomes increasingly more informed and completed by the inputs of all involved.

'Maybe a loop is not the right word, maybe it's more like a spiral of ever increasing detail but I suppose within any kind of process where you're thinking about something quite complex, like a building or a construction project, you need to be able to start with an overview of the general ideas and then gradually get into the detail and you might be working in different scales of things at the same time but each time you go round this loop you might be looking at slightly different things.' (Int. B, m.)

In the process of negotiating meaning there is specific sense of learning from each other, which was described by two interviewees as one of the most enjoyable things about their profession. Learning from other people's experiences and ideas was experienced as a key positive element of the communication process with their clients:

'The sense of camaraderie with people as you're taking their unique knowledge and building that into the design experience, that's a real positive.' (Int. I, f.)

3.1.4 Translation

Data shows that working with very young children sometimes causes a gap in communication, and some interviewees talked about the need for 'translation' of

meaning. In this case, some designers reported having to find new ways to listen and try hard to interpret what the children mean by what they say:

'Because they were very young children (3-5 years old), perhaps they also represented a communication gap - they had a lot to say but we had to talk and listen in different ways to capture their whole experience.' (Int. L, f.)

The underlying meaning can be easily lost so practitioners had to learn to really listen closely to what children have to say:

'I've just started working with early years, but when they're communicating things I think that could be easily dismissed because it's not communicated in the kind of conventions that people are used to in a more adult world, so it's about seeing the significance.' (Int. H, f.)

However having to learn to listen closely and exploring the underlying points may present the designer with a new challenge, as the following interviewee points out:

'Listening to children, that's quite challenging. So through the projects I learnt more about how to listen and when it's hard to listen and what gets in the way of that.' (Int. H, f.)

At the same time, explaining complex issues in a manner understandable to children may also be challenging. Some practitioners said it required rephrasing the questions and asking things in different ways, more related to their experiences rather than asking for answers involving a particular physical structure:

'Rather than saying "what do you want" we asked "what is most important to you?" It was more honest and in a sense less about the physical and more about their experiences, than say it would be with adults.' (Int. H, f.)

‘Trying to get them to think about how they wanted to be rather than starting with what should it look like: it was very much thinking about the experience.’

However rephrasing and simplifying questions has to be done with care, not to lose the built trust relationship, as one of the designers notes how the children could sense when an adult is patronising them:

‘We may have to think about different ways of presenting our ideas to explain them properly and the one thing we don't ever do is talk down to children because they know it, and they don't appreciate it.’ (Int. G, f.)

3.2 Interview findings used to inform the scope of research focus

In summary, this brief qualitative interview analysis has shown me that when reflecting on communication with children, designers emphasize the role of emotions as much as the role of effective methods to communicate efficiently. This is related to the fact that participation is a social process, influenced by all actors (e.g. the need to establish a trustful relationship, the need to understand each other, the ways to negotiate and find consensus when opinions differ). Finding a common language between children and designers has been described as easier after the participants gained some mutual trust. What designers referred to can be framed as establishing a sort of 'proto community': a small, temporary community formed on the basis of 'shared interests, desires, leisure activities, unplanned events and overall contingency' (Willis, 1990; described in more detail in subchapter 4.3.1: Co-creation of meaning).

The subject focus of these conversations relates to the use of spaces – a topic that everyone has some experience with from life experiences. The individual's preferences related to spaces may be very different. Space is a shared and limited resource that people use and shape in their everyday lives, and is therefore a subject topic that may cause heated discussions. The prerequisite of finding a consensus is being able to try to understand what the others are saying, and that happens through a negotiation of meaning. This was reflected in the ways designers reported experiencing the challenges of negotiating different opinions.

Many designers felt there was a need for 'translation' between the languages that children and designers used – especially in the case of younger children. The interviewees experienced this 'translation' like they had to learn to listen in new ways, and examine the meaning with new approaches. The children's skills and abilities to talk about space and express their preferences is prompted and encouraged by the use of many methods. The visual, haptic and generally multimodal nature of these methods was emphasised and highlighted as something where most children could find their preferred means of expression.

These simple, but powerful threads of thought based on designers' experiences are used as a starting point for constructing the scope of theoretical framework.

4. Field overview: children, designers, communication

4.1 Children

I begin this exploration by looking in more depth at the first culture of my research interest – the culture of childhood. I look at how literature describes and explains some characteristics of children's meaning making, as opposed to those of adults.

4.1.1 Childhood as a social construct: New sociology of childhood

'In his book, The Little Prince, (1945) Antoine de Saint-Exupery writes that grown-ups cannot, on their own, understand the world from the child's point of view and therefore they need children to explain it to them. This is wise advice indeed for childhood researchers. Only through listening and hearing what children say and paying attention to the ways in which they communicate with us will progress be made towards conducting research with, rather than simply on, children.'

(Christensen and James, 2008, p. 9)

Christiensen and James frame the act of researching with children in a way that I understand to be similar to designing spaces for children. In other words, I take the position that design should be done 'with' children rather than based 'on' what designers perceive as children's needs. But first, there is a need to better understand the culture and concept of childhood.

The 'new sociology of childhood' frames childhood as a social construct based on biological factors, which has been recognised in different ways over the course of history (James and Prout, 1997a). Taking a developmental perspective, childhood can be seen as the period of a lifetime when a person is somewhat inferior to the adult, and where children are seen as human 'becomings'; individuals in the process of developing all attributes still missing in order to become an adult (James and Prout, 1997a; Patsarika, 2011). This understanding positions children automatically outside of the normative 'cultural context', the context of 'being'. In

contrast to seeing children as ‘becomings’, a paradigm of children as ‘beings’ defines a child as a person, who actively constructs their own life, and their own ‘childhood’ (James and Prout, 1997b). Following the ‘new paradigm of the sociology of childhood’ (Ibid.), the ‘new sociology of childhood’ sees children as ‘active future-shaping agents’, who actively participate in shaping their own lives and the experience of ‘childhood’ (Wells, 2009, p. 16). They are seen as socially competent actors (Hutchby and Moran-Ellis, 1998), who actively create their own identity (James and Prout, 1997b). In this context, Uprichard argues that the construct of childhood should include both definitions of children as ‘beings and becomings’, which increases their notion of agency even further: bringing together their social engagement in the present as ‘beings’, as well as including their past experiences and shaping the future as ‘becomings’ (Uprichard, 2008).

Throughout history, a child’s experience of life was greatly influenced by how the context of childhood was constructed by society (James and Prout, 1997b). To understand how childhood may be constructed within the framework of a society influenced by the consumption market economy, Buckingham discusses how the ideas of children's identity and physical expression have become a very broad cultural phenomenon; a means of expressing 'cultural symbols and meanings' (Buckingham, 2011, p. 37). In the context of childhood communication, he examines multimedia franchise obsessions such as Sesame Street, Harry Potter, Disney films, and many others, which affect consumers also by creating an elite group of peers, based on the knowledge and understanding of the cartoon/game (Buckingham 2011: p.93). Buckingham’s definition can be compared to Young and Willis’ notion of forming a specific ‘proto community’ (1990); a community that can exist in a digital environment, and can go beyond the borders of language, race and age borders, linking shared identities of fans (Young, 2008). This infers that consumer society and related pop culture has an influence on shaping the idea of childhood, which influences a child’s experience of life in specific ways. It is important to understand this when examining how children communicate and make meaning of the world around them. Language and literacy is also influenced by these specific aspects of contemporary western culture, and Williams explores the role of popular culture in developing literacy skills amongst children and youth. He discusses the great potential of developing ‘online literacy’ practices through different technologies and communication

methods, which children and young adults enjoy and intensively use in their daily lives (Williams, 2009).

Market research shows that in a consumer society, children are mainly represented as 'powerful, autonomous consumers' (Cook 2000, in Buckingham 2011: p.19), who use products as forms of expressing their identity and individuality. Buckingham discusses the term 'tweens', as established by a 'self-professed brand futurist' Martin Lindstrom in the book *Brandchild* (2003, in Buckingham 2011: p.19), for children aged eight to fourteen years, who were born into the digital society, and speak a specific new evolving language 'tweenspeak' (2003, in Buckingham 2011: p.19). The so called concept of 'Tweens' describes this generation as wanting to be listened to, having many anxieties about global problems, and showing a tendency for spiritual themes (2003, in Buckingham 2011: p.20). Buckingham here notices an interesting paradox, which emerges between the commercial marketing for young children, and their critics who defend children's rights (Buckingham 2011). Marketing in fact acknowledges the child as an autonomous human 'being' with his or her own opinions and personalities, bringing them on the same terms with the children as autonomous social agents (James et al. 1998; in Buckingham 2011: p.21), while the critics base their argument on the idea of childhood as an 'innocent and powerless stage in life' (Buckingham 2011: p.21). This may be a slightly extreme representation of children's agencies. However in any case, it cannot be denied that the contemporary lifestyle in the digital era has to some extent influenced the way that childhood is constructed today, and the way that children communicate with each other and the rest of the world.

How does an individual belonging to the age group defined as 'adulthood', perceive another individual belonging to another age group, named as 'childhood'? First of all, as James and Prout remind us, age is, like gender, a variable based on biological factors (James and Prout, 1997b). However grouping people by age is an oversimplification of the social construct built around it. They warn that without taking into closer methodological consideration, this can often be misleading when used as a common grouping factor in social sciences (James and Prout, 1997b).

James and Prout emphasise that the child's experience of life was greatly influenced by how childhood was seen through different historical eras so the life

that is lived by children is co-constructed, shaped and steered in the direction which the adults construct within their cultural context (Ibid.).

The conceptualisation of children as human 'becomings' as individuals in the process of developing all attributes still missing in order to become an adult (Uprichard, 2008), looks at childhood as the period of lifetime when a person is somewhat inferior, incompetent and inactive, when compared to the idealised definition of adulthood (James and Prout, 1997a; Patsarika, 2011). This paradigm goes into two extremes – children seen as innocent protégées of adults, or undeveloped, potentially causing disruptions to the adult construct of society. In both examples, children are here framed as having limited agency in their own lives. Education is one of the most common contexts for child-adult interactions in contemporary Western society. This fact may show that our society at the moment still predominantly depends on seeing children as 'becomings', or incomplete adults, who are kept and educated separately from the processes of the everyday adult world (James, 1996).

4.1.2 Children and meaning making

There are many approaches to interpreting the multitude of children's meaning-making, and one way is looking at them from the perspective of children's drawings – itself a specific area of study. Using drawings can enable children to say what they want to say, in the way they want to say it, through a complex combination of graphic, narrative and embodied elements of communication. Children's drawing is according to Wright a 'window into their realities and how they shape these' (Wright, 2010, p. 11). Observing the drawings as well as the accompanying narratives and gestures, provides a full understanding of the child's thoughts and feelings expressed in the drawing (Ibid.). Gallas agrees that children's languages are much more than through words, communicated by 'gestures, looks, and the set of our mouth' (Gallas, 1994, p. 158). Wright shares a similar view, based on observing children's creative meaning-making through the process of drawing, where the feelings and the narrative of the drawing become externalised to involve the interlocutor in the story - involving them in some type of play activity (Wright, 2010, p.28). She argues that children make drawings to create meaning and communicate it with others (Wright, 2010, p. 23). It is a highly creative process, where various modes of expression are combined, and in

order to understand them, the 'reader' must rationally consider the content and the three modes of communication, i.e. the 'graphic, narrative and embodied' types (Ibid., p.23). Therefore Wright believes it is vital for educators and people working with children to understand the meaning of a child's drawing in the context of their ideas, actions and feelings (Wright, 2010). She argues that art is a medium through which children can express their thoughts and feelings as they are, without any adults affecting their creations. Wright compares children's use of art to linguistics, developing their own language from materials and forming grammar of communication within their own rules (Wright, 2010, p. 6).

Wright emphasizes the fact, that in order to understand the overarching or embedded message, children's drawings must be inspected more deeply, below the surface. This includes observing and interpreting the child's accompanying gestures, pauses, and drawing elements being combined with language (Wright, 2010, p. 11). This can be compared to the methods of communication as set by Malaguzzi from his experience in 'Reggio Emilia' (more detail in the following sub-section), summarised into four groups: the visual, verbal, sensory and kinaesthetic (Edwards et al., 1998, p. 7). Wright reviews the work of several authors describing this combination of simultaneous actions including language, image-making and bodily actions, summarising them as 'playing with the process of signing' (Cox in Wright, 2010, p.22), 'assemblage of signs' (Chandler in Ibid., p.22), and 'integrated languages' (Goodman in Ibid., p.22). Wright identifies these as 'integrated texts' as the produce of children using multiple modes of communication (Ibid., p.22).

One way of building meaning is through stories, building 'mental models' of experiences through narratives (Gallas 1994, p.xiv). These narratives, as Gallas finds through her research with children, are imagined constructs of the real world, whether they are true or fantasy-based (Gallas, 1994). She explores and broadens the definition of narrative, a 'complex of signs and texts that make children's thinking visible' (Gallas, 1994, p.xiii). In the sense of showing how children best communicate the thoughts and products of their imagination, Wright similarly talks about how 'imagination, creativity, fantasy and play are fundamental components of children's art and meaning-making,' and how they reflect the stories that children make to make sense of their worlds (Wright 2010: p. 8-9). She argues that the medium of art is a first development of literacy, and helps children to develop the much needed skills to navigate the endless number

of meanings found in the world around us (Wright, 2010). This view is also shared with Clark, who introduced the 'Mosaic Approach' (Clark, 2010, p. 27). She notes that it is easier for children to express themselves if they can adopt various multisensory communication means: visual, spatial, physical tools (Clark, 2010, p.48). In her search for common ground in which architects and young users could meet and create a mutual understanding of ideas in a design participation process, she proposes engaging in creative activities, such as 'making play structures together' (Clark, 2010, p.157). This is an effective method which involves exploring the use of 'making' for communication. Play activities develop spontaneously, with children freely choosing the extent of their involvement in the process (Clark, 2010, p. 29).

4.1.3 The role of education in developing communication skills

Having explored the richness of the world of children's communication, it is difficult to ignore the many criticisms of the linguistic-numerical approaches adopted by most educational institutions nowadays. Within a 'school' context, a specific validation process of expressed ideas comes into force, which has an influence on how children are trained to filter their thoughts in accordance with the school's views of what is correct and what is incorrect. This confrontation with the school's social construct is discussed by Diana Fuss (1989). In a school, she argues, identity becomes more rigid, politics and our pasts become more intense; and what is most apparent, an individual's identity becomes directly dependent on prior experience and gained knowledge (Ibid.). In a classroom, we become what we know, and less emphasis is given to the personal development and emotions, she argues (Fuss, 1989). This may not be the case in all educational systems, but the traditional types which generally still prevail in most cultures. Within this context, a specific kind of reduction of an individual's identity and voice comes to force. The young person's voice, values and knowledge become subject of constant assessment against requirements, which is expected to influence the ways in which children learn to communicate.

Wright summarises her discourse about interpretation of children's drawings with a thought that unfortunately, the majority of schools underestimate children's intellectual potential by focusing on ruled and structured symbolic systems such as letters and numbers (Wright, 2010, p.178). Such a system misses

the rich world of meaning that dwells in the 'free-form narrative' through graphical and bodily action (Wright, 2010, p.178). She argues that without encouraging these sign systems, 'employing mental images through configurational signs', being imaginative at creating narratives and adopting gestures and sounds to accompany the meaning communication, these skills begin to weaken until they fade away (Wright, 2010, p.178).

By focusing on limited language-based thinking processes, Gallas argues that the natural expressive potential becomes obsolete and gradually forgotten (1994). However, as the author shows, creative process is a vital part of higher-level thinking that is ironically believed to be taught in most western world education systems, while according to Gallas it is in fact being inhibited and forced into regression (Gallas, 1994, p.116). As these are the natural ways of expression for children, she argues, children are extremely able to communicate in various ways and are equipped with 'an enormous number of innate tools for acquiring knowledge' (Gallas, 1994, p.xv) when they come to school. It is then, she observes, that spoken and written language is given most value, as it is the prevailing type of communication in the adult world. During her years of working as a teacher, Gallas noticed many children by all standards not successful in school, who were however extremely capable of expressing their stories through various mediums of art - by 'pictures, dances, songs, poems and dramas' (Gallas, 1994, p.112). Many artists, argues Gallas, acknowledge that the 'most pure and direct level' of artistic expression comes to children naturally (Gallas, 1994, p.115). It is simple and clear, however too often misinterpreted by most adults as 'naive, magical, constraining, and misconceived'; showing the rigidity that adult's mind is discussed to possess (Gallas, 1994, p.115).

Drawing from the literature of diversified ways of expression and learning, the Reggio Emilia approach can be used as a way to frame childhood in the context of multiple languages that children use to express themselves. This approach is a specific set of 'philosophical and pedagogical assumptions, methods of school organisation, and principles of environmental design', which has been evolving for more than thirty years in a province in northern Italy (Edwards et al., 1998, p. 7). It is a widely acclaimed approach to teaching, which focuses on developing children's intellect through 'symbolic representation', problem-solving, project learning, and establishing strong links with the community (Edwards et al., 1998, p. 7). The main focus is supporting the natural ways in which children express

themselves, using all available languages including 'words, movement, drawing, painting, building, sculpture, shadow play, collage, dramatic play, or music' amongst many others (Edwards et al. 1998: p. 7). The core drive towards education is created from a strong communicative basis between children and adults, in which both children and adults learn and discover new knowledge through close collaboration with each other (Ibid.).

Since the focus of this research is the conversation between children and designers, a process which most commonly happens within some sort of an institutionalised educational context, it might be beneficial to be aware of such debates about general education. The mentioned criticisms raise further questions about the adult-child power relations, and freedom of expression. Even though these questions do not fit within the scope of this thesis, they remain in the background of my analytical mind when working with data.

4.1.4 Multimodality in the ways of making meaning

The exploration into multimodal and multisensory worlds of children's communication and meaning making begins with drawing, a key communication component of any civilisation (Wright, 2010). Immersing oneself in children's processes of drawing can provide valuable insights into imagination and rich internal worlds (Ibid.: p.23), however the drawings have to be studied from their accompanying 'graphic, narrative and embodied' perspectives (Ibid.: p.23).

Children will express themselves using all available languages including 'words, movement, drawing, painting, building, sculpture, shadow play, collage, dramatic play, or music' amongst many others (Edwards et al., 1998), recently adding a new type of literacy, integrating multiple ways of communication through fast growing popularity and availability of digital media (Williams, 2009, p. 199).

Drawing from these authors, the languages that children adopt when making meaning are various, versatile and multimodal – perhaps universal. Does this versatility of expression however also mean that it is easier to find a common language in a complex process such as design? Clark suggests that since 'verbal/linguistic skills are often the language adults feel most secure in using' communication, they need to learn new languages, skills, and types of communication; they need to become co-learners with children (Clark, 2010, p.

46) on the way to a multi-modal common platform of shared meaning-making. Whether adults are in fact often most comfortable using verbal language might be a social assumption worth exploring further; and it might be valuable to find where adult designers fit within this statement, drawing from authors (cited in the following sub-section 4.2.1 Designerly ways of knowing), who argue that designers are in fact fluent and confident in using visual and spatial language (Cross, 1982; Dorst, 2003; Lawson, 2004).

Young discusses various nonverbal modes of expression accompanying language including 'bodily gestures, facial expression, clothing, spatial positioning, ritual practices, and expressive systems such as the visual arts' (Young, 2008, p. 11). Following the work of researchers such as Alison Clark, Karen Gallas and Susan Wright, this thesis proposes that children express their stories in different ways such as 'dramatic play, ... drawings and paintings, ... movement and spontaneous song' (Clark, 2004; Gallas, 1994, p. xv; Wright, 2010).

Looking at non-verbal expressive systems, I draw mainly on Gallas, who expands the topic suggesting that visual arts offer a diverse communication tool (Gallas, 1994). She infers that it is through art that people naturally learn and express themselves about the world (Ibid.). In her work she searches for ways into the complex capacities of the human mind to reflect upon and reorganise mental experiences, which are no longer possessed by most adults (Ibid.). According to her observations, such abilities are preserved by creative individuals, especially artists, who 'manage to remain versed in a vast array of expressive strategies' (Gallas 1994: p.xvi). 'That we relegate the adaptive use of song, movement, painting, sculpting, drama, and poetry to a small segment of our population does not confirm that those areas of expression are available only to a few - only that those few have made a conscious choice to live their lives immersed in other ways of being' (Gallas 1994: p.xvi). Fluency in multimodal languages might therefore be beneficial to people in some ways, as Gallas suggests. But most valuably, exploring multimodal ways of expression has insinuated a link between childhood, creativity, and communication, which is an area worth exploring further in the context of the research question.

4.2 Designers

The second culture of my research interest is the culture of designers in general, but more specifically the ones engaged in spatial design. I explore this notion with the focus on specific traits of communication within this culture and with other cultures, the specific ways of making meaning and knowing.

4.2.1 Designerly ways of knowing

'... in terms of chess, [designing] is rather like playing with a board that has no division into cells, has pieces that can be invented and redefined as the game proceeds and rules that can change their effects as moves are made. Even the object of the game is not defined at the outset and may change as the game wears on.'

(Lawson, 2004, p. 20)

Designing is an act of finding solutions to design problems, which are normally different than problems in other disciplines; Lawson describes them as 'ill-defined', 'ill-structured', or 'wicked', (Lawson, 2004, p. 20) and never fully known at the beginning of the process. The problem shapes and changes as designers embark on the journey of finding the right solution, and the nature of the problem starts to take its new form. On the way, the designer finds many dead-ends and failed solutions, which are all part of an iterative process of going back and forth from framing and reframing the question and the solution (Hickling, 1982).

Authors Lawson and Dorst also highlight the importance of personal reflection within the process, being able to step back and re-enter the process with a new viewpoint (Lawson and Dorst, 2009). The problem and solution are constantly co-created and re-defined through parallel thinking, which allows the designer to continuously frame and re-frame the set problem (Dorst and Cross, 2001). A design method can be seen as a 'series of mental procedures that architects adopt in applying their favourite principles to the design problem' (Gutman, 2010, p.

157). All these mental processes require constant communication with self, in order to rethink and restructure the problems at hand.

With all this in mind, how does this specific approach to problem solving affect the ways in which designers communicate their thought processes, whether it is to themselves through the constant reflection process, or to other people? If we frame design as a situated social process (Kress and Van Leeuwen, 2001), what forms of communication then can be seen within it? The skill of visual communication is generally assigned to designers, including the ability of thinking about design through sketching, drawing (Dorst, 2006) and making models (Cross, 1982). However, narrative and conversation also hold an important role in design, whether by accompanying drawings and models, or by forming a design discussion on their own (Lawson, 2004). In the process of acquiring expertise, designers develop certain concepts and schemata, which are used as basic elements for communication with other designers in design processes (Lawson, 2004, p. 111), and through the course of their work, every designer develops certain 'guiding principles' for their practice, consisting of specific ideas, beliefs and values (Lawson, 2004, p. 111). So through experience, individual designers tend to form a combination of communication methods that works best for them (Dorst, 2006).

A way of communicating design solutions to others is by finding patterns within the problems and looking for parallels with remote situations (Lawson and Dorst, 2009), which are known to the other person. Changing the solutions and redefining problems can also be described as adopting an iterative process of constant jumping from problems to solutions, framing both at the same time, and repeating the process (Hickling, 1982).

Based on these specific characteristics of designing, Cross establishes the notion that designers are engaged in a specific way of 'knowing' (Cross, 1982), involving 'conception and realisation of new things', 'appreciation of material culture and applying the arts of planning, inventing, making and doing', the 'language of modelling', and the specific ways of 'things to know, ways of knowing them, and ways of finding out about them' (Ibid., 1982, p.221).

4.2.2 Design and abductive reasoning

Following the above mentioned discourse developed within Design Studies by authors Archer and Nadler, outlining design as a 'coherent discipline of study', Cross introduces the concept of 'designerly ways of knowing'. This phrase, labelled by Lawson as 'delightful' (Lawson, 2004, p. 95), relates to specific design ways of 'things to know, ways of knowing them, and ways of finding out about them' (Cross, 1982, p.221). It also suggests that there are different ways of 'knowing', for example, 'knowledge in action' is the knowledge needed to be able to ride a bike, or the knowledge needed in order to see or hear in a particular way – such as identifying a song by a certain known author without hearing it before. The phrase also implies that there are some ways of knowing that designers use with more success than others (Ibid.).

The philosophical background to 'designerly ways of knowing', as Cross suggests, is the concept of 'abduction' (discussed in more details in chapter 2: Methodology, page 13). Cross continues to conceptualise design in general education for laypeople, offering a new perspective on public participation (Cross, 1982). He notes, critically, that the act of 'letting people participate' simply reflects the superior position of design profession in today's society; and in most cases does not change the roles of designers and users, and does not influence design decisions within modern industrial culture (Cross, 1982, p. 143). He goes even further to say that 'no one has the right to design for someone else', as we are all users of numerous products and places, and we constantly co-create and re-shape them according to our habits and needs (Lawson, 2004, p. 84). Lawson suggests that if designers recognised that we are all laypeople dominated by the design process, 'we might stop talking about participation in the design process and start thinking about liberation from the design process itself' (Ibid., p. 143). Cross uses his statement as one of many reasons for including design in general education, which, he implies, should focus on understanding the process rather than the products, the socio-technical context of decision-making, and deciding what should be designed (Ibid., p.145). Therefore, if we are all users, we are also all designers at different levels in our daily lives, as Lawson also argues (2004, p.7). Lawson proposes that people experience a difficulty articulating the basis on which their everyday design-related decisions are made, and at the same time he recognises this decision based as a manifestation of 'unselfconscious designerly way of knowing' (Ibid.).

Closing the discussion by raising more questions than answers, this section briefly explores some views on design problem solving and design thinking and their connections with the lay public – through both participation and design in general education. The role of communication is embedded in design, and it will be addressed in more detail in future sections.

4.2.3 Design languages

'While working on a drawing you concretely touch all the edges and surfaces of the designed object with the tip of your pencil that has become an extension of your fingertips. The hand-eye-mind connection in drawing is natural and fluent, as if the pencil were a bridge that mediates between two realities, and the focus can constantly be shifted between the physical drawing and the non-existent object in the mental space that the drawing depicts.'

(Pallasmaa, 2009, p. 60)

Various languages are mentioned in the context of a design language. The 'language of modelling' is according to Cross a self-standing language which can be set alongside the languages of sciences (numeracy) and humanities (literacy) (1982, p.221). As mentioned above, in the process of acquiring expertise, designers develop certain concepts and 'schemata', which are used as basic elements for communication with other designers in design processes (Lawson 2004, p. 111). Through the course of their work, every designer develops certain guiding principles for their practice, consisting of specific ideas, beliefs and values; and these are the root of satisfaction in their work, influencing their projects greatly (Lawson, 2004, p. 111). The lovingly named 'ugly little sketches' help designers think about the problem and proposed design solutions, and represent a communication tool between the designer and the design (Dorst, 2006, p. 134). Dorst argues that there are different mediums designers feel comfortable with; some draw sketches, others do models, some are most comfortable using narratives (Dorst, 2006, p. 134). The trick is to find a medium where one is fluent, to 'put down the developing ideas' (Ibid.).

'Drawings and models have the double purpose of facilitating the design process itself and mediating ideas to others.'

(Pallasmaa, 2009, p. 60)

Many of the texts focus on design being framed through visual methods. However, design very often involves communication with other people. Real world design process happens mostly through conversations between the designer and the clients, users, legislators, suppliers, manufacturers, other designers and many others (Lawson, 2004, p. 84), so translation between different professional languages is always necessary. The participants in the design conversation have to form some sort of common understanding, a defined frame of conversation. Following Schoen's quotation that 'design conversation is a reflective conversation with the situation', Lawson argues that conversation can reveal the mental process that goes on in the background while simply studying the sketches or the final drawing is not enough (Ibid.).

Lawson suggests that design conversations are a vital part of any design process, no matter what medium the designers are most comfortable with. He assumes that the drawing medium is most obvious because the end result we see is in one way or another a visual representation of a design process, while the conversations that made it happen, 'went into thin air' (Lawson, 2004, p. 87). By researching designers' work, he has shown that the base mode of design conversations is indeed narrative, which leaves enough room for imagination and mental manipulation of images (Ibid. p.88). Drawing from Cross' research, the 'unexplained leap' between two unrelated ideas is shown to happen in the space of narrative, by words bridging different ideas together (Ibid.).

However, being able to communicate without restrictions is perhaps not most productive in all situations. As Dorst discovers through using the 'Collaborative Design System', the online tool for design partners working from different locations, being restricted in time and means may actually result in better design work (Dorst, 2003, p. 140). Dorst explains that paradox with the fact that designers in these cases have to be as specific as possible and get rid of all vagueness of design speaking (2003). This view of good practice is perhaps reflected in expressing complex ideas through simple diagrams, catchphrases,

and single words, which is according to Lawson a common practice in design conversation (Lawson 2004, p.110). This particular experience can perhaps be questioned further drawing on authors arguing that collaborative creativity and design are best fostered in a slightly more 'ambiguous' and 'vague' reality (authors such as Hofmann, 2014 and Wright, 2010). In the context of spatial design, trying to communicate the multisensory qualities of spatial experiences can represent a challenge. Wright suggests that, ironically, by trying to describe the world within and around us, we are in fact changing it, blurring the lines between reality and our own interpretations and representations of it (Wright, 2010). Experiences cannot be relived, only retold; they remain an interpretation of a moment in time. They are interpretations on the part of the teller as well as on the part of the receiver; personalised and objectivised on both sides (Green 2011: 119). It is exciting to share some of those places that are so intimate and personal, and compare one's own emotional experience of a place with somebody else's (Green 2011: 119).

4.3 Communication

Finally coming to explore some general characteristics regarding the activity that relates designers and children within the focus of my interests, I explore literature on what communication is and how it is done through co-creation of meaning. I explore concepts from theories surrounding language and semiotics, which could be useful for later construction of the theoretical framework.

4.3.1 Co-creation of meaning

'Word is a two-sided act. It is determined equally by whose word it is and for whom it is meant. As word, it is precisely the product of the reciprocal relationship between speaker and listener, addresser and addressee ... I give myself verbal shape from another's point of view'

(Voloshinov, 1973, p. 86)

The reciprocity of communication can be understood as both parties bringing something of their own to the dialogue, co-constructing the meaning. How meaning is constructed is however also influenced by how the conversation takes place and what is expected of the people taking part. Young suggests there is an unwritten rulebook that exists for every situation where people communicate (2008). He defines it as 'discursive practice', a set of interactional routines and shared expectations about how interaction is to take place in a certain communicative situation (Young, 2008, p. 55). When moving to a new community or country, this is the first thing we notice, as we do not fit within the different interactional routines (Ibid.). Similarly, Bakhtin's 'Genres' imply a set of values and a certain viewpoint of the world; this can be observed when communicating in a foreign language - even though we speak a correct combination of words, we can 'feel quite helpless in certain spheres of communication precisely because we do not have a practical command of the generic forms in the given spheres' (Bakhtin, 1986, p.80 in Young, 2008, p. 6). In other words, even when the same language is used, there is a need for translation

in order to make sense of the other's story when people from different backgrounds, beliefs and cultural contexts come together (Ibid.). These practices are not innately known, we have to learn them. Similarly children, for example, learn a new routine explicitly by having it explained by somebody who knows it, or implicitly by watching and mimicking others (Ibid.).

In this context, every discursive situation has its own specific set of rules, values and expectations, and when we communicate, we create some sort of community. Exploring the theory of how communication communities are formed and what their potential impact might be on the way we use language, we come across Willis' work. He argues that the traditional 'organic communication communities', which allow a flow of communication within themselves as well as outwards to neighbouring communities, are re-shaping themselves in the era of 'late modernization', evolving into new, so-called 'proto communities' (Willis, 1990, p. 141). The latter have emerged from different local origins than the 'organic communities' formed based on material conditions of existence (Ibid.). 'Proto communities' form on the basis of 'shared interests, desires, leisure activities, unplanned events and overall contingency', argues Willis, all increasingly present in today's society (Ibid.). These groups may not necessarily share direct communication, but express their belonging with the use of fashion, interests, opinions, beliefs, values and many others. Such shared interests and recognising others as being a part of a shared 'proto community', brings people together and gives them a way to spot each other as more than strangers (Ibid.), therefore building a certain level of trust. This infers that the use of language might potentially be influenced by what kind of community we find ourselves in, and how we identify the people we communicate with. Such communities share a specific 'discursive practice', which is identified only by the members, who have learnt the practice beforehand (Young, 2008, p. 55).

But moving from one community of communication to another can be hard. Any change is hard. When discussing identities and rooted behaviour of professionals, especially ones successful at their work, Miller and Dollard discuss that they are extremely difficult to teach new things because of the absence of dilemma – their old habits have been heavily rewarded over the years and those need to be put into a completely different context in order to be questioned (Miller and Dollard, 1949). They argue that old habits, belief and behaviour have to be almost

demolished by unusual circumstances in order to develop new responses, which can then start to be rewarded.

4.3.2 Language

[Language is] the primary means that people use to communicate, to construct identity, and to establish membership in communities ... The study of language in social interaction is therefore a door into understanding how people function in society'.

(Young, 2008, p. 3)

'Communication relies on both speaker and hearer taking account of each other's intentions and knowledge'

(Bennett, 1993, p. 47)

Young's definition frames language not only as a vehicle of communication, but also as an important identifier of people's roles in society (2008), while Bennett recognises the importance of what all involved parties bring to the conversation (1993). Both understandings are relevant to the interests of this research, taking into consideration the multiple ways in which people construct their meaning in social interaction, and how the dynamics of a conversation is influenced by who is included in the dialogue.

As this brief overview shows, human language can be seen as an extremely complex combination of multimodal ways of expression, and many factors have to be taken into account when interpreting social interaction in real life situations.

4.3.3 Semiotics

The semiotics of human language is a very broad area. A large number of actions can be understood as language-related symbols, including 'gesture, body

language, facial expressions, eye contact, dress, writing, speech, the mass media, advertising, drawing, photography, space, cuisine and rituals' (Wright, 2010, p. 11-12).

In the field of applied linguistics, language is divided into two areas: its pure linguistic side, and language in the context of social interaction. The latter has not been studied to the vast extent that language itself has been, and offers a space for exploration into how people communicate with each other (Young, 2008). Social interaction also includes many nonverbal forms of expression; by exploring how people use them in a particular place and time, with other individuals, for a specific purpose, we begin to understand how language functions in live interactions (Ibid.). A method of investigating the 'social actions performed by participants in interaction' was developed by Garfinkel, Sacks, Schegloff with their colleagues and students at UCLA, as a step further from pure linguistic analysis of conversation (Ibid., p.11). The focus of this method, called 'Conversation analysis', is broader than communication through verbal use of language; it includes the uses of multiple other means of symbolic interaction (Ibid., p.11).

As discussed above, symbolic acts by people manifest themselves in many diverse ways, and amongst other things, they help structure the way we make sense of ourselves and others within a society. According to Willis, language is just one of the elements of 'symbolic work', together with 'the body, drama and symbolic creativity' (Willis 1990, p. 10). Language is the main way to communicate, and it puts our impressions of the world in order (Ibid.). The body is the source from which the communicative activity comes; it shows signs, symbols and feelings, and puts them in the right combination to aid one's communication process (Ibid.). The third element is drama, defined by Willis as an act and a source of symbols - playing different roles and performances which emerge between people (Ibid.). The final element is in symbolic creativity, which is the background process of all the above stated, Willis defines this as the force that drives creation of individual worlds, finding identity and meaning for our place within society (Ibid.).

Willis argues that in fact there is a lively 'symbolic creativity' present in all of our everyday lives, activities and expressions (Willis, 1990, p. 1). He shows an example of young people, who in everyday endeavours to express themselves and their 'cultural significance', create meaningful 'expressions, signs and symbols' to

establish their place in the social context (Ibid.). The 'institutionalisation of the arts' has somehow excluded young people and their self-created 'cultural symbolism and expressionism', he argues; however symbolic creativity is vital for creating an individual and group identity (Ibid.). Willis sees teenagers and young adults in the western world as active creators of their own identities through their symbolic lenses, through which they make sense of themselves as part of the cultural world and society (Willis, 1990, p. 10). He believes this particular time in a person's life is most significantly marked by the creation of meaning about the complexity of the world; it is described as part of daily 'necessary work' (Ibid.), not only as one of our everyday activities. He defines 'necessary work' as the action taken to satisfy basic human physical needs: humans are seen not only as producing, but firstly as communicating beings, using communication as a tool for manifestation of the 'social and dynamic nature of humanity' (Ibid.). I draw on his view to frame how communication is used as a tool for manifestation of the 'social and dynamic nature of a specific strand of humanity' – the skill to read and write space.

4.4 Emerging themes informing the scope of research focus

The themes and concepts explored in this chapter provide me with the theoretical basis for defining the focus of interest in this thesis.

The field overview reflects an understanding of both children and designers as skilled at combining various modes of expression. Multimodality is essential for children's everyday meaning making, and designers use a multitude of expressive modes to draft, form, examine, reframe and eventually present their design ideas to others. Through the complex process of design and through years of practice, designers develop their own individual ways of experiencing space and communicating it to others. Empirical data collected through fieldwork is a collection of expressions produced through the modes of speech, gestures, drawings, and model making. The field of semiotics – the theory of the use of signs and symbols – may be a useful to help inform the analysis of such multimodal data.

In summary – communication is a social process, where the meaning is constantly being co-created by the interlocutors. The interlocutors create a common ground of understanding from which the meaning can be negotiated. I understand that the ‘meaning’ in my research interest is expressing preferences about spatial use. And the ‘common ground’ is reflected in the various multimodal ways in which space can be ‘read and written’ in order to establish a meaningful communication about its use. I frame this understanding, for the purposes of this research, as spatial literacy, or ‘spatial literacies’, to reflect the multitude of literacies as they are enacted differently in different situations and by different people. The next chapter explores this concept.

5. Theoretical framework: spatial literacies

This chapter is dedicated to building the theoretical framework, constructed based on findings and emerging themes from the previous two chapters. Drawing on findings from the exploration of practice through interviewing designers (Chapter 3) and the field overview of key terms (Chapter 4), the concept of ‘spatial literacies’ emerges as the most appropriate theoretical framework for addressing my research interests.

My construct of the concept of ‘spatial literacies’ is used as the core lens for interpreting empirical data produced through involvement in three case studies, as a context for understanding how participation happens, and for guiding data analysis. In the light of my research questions, this chapter explores the relevant academic discourse on various types of literacies, aiming to construct a clear analytical framework for further work on ‘live design case study’ data.

Why focus on ‘spatial literacies’?

Assuming communication is at the very core of social interaction, I choose to adopt the concept of ‘spatial literacies’ as a lens for exploring data. I adopt it as a theoretical and analytical framework for exploring communication between children and spatial designers involved in collaborative design processes.

So what does ultimately drive me to be interested in ‘spatial literacies’ in the context of child and spatial designer interactions in the design process? My key motivation as a practitioner and a researcher is that I believe that understanding others and being able to express ourselves in ways that others understand us, is a very important skill in the world of spatial design. Drawing on my previous experience from practice, review of recent literature and empirical work, I argue that the notion of ‘spatial literacy’ can be extended well beyond the discourse on definitions found in current literature (Comber et al., 2006; Demšar Mitrović et al., 2007; Goodchild and Janelle, 2010; Havik, 2006; Ingold, 2000; Pearce, 2008). Spaces and places we encounter on a daily basis carry a myriad of meanings that can be read and written, and are crucial to our functioning in the world as a physical realm.

What I now understand as spatial literacies is something that emerges in conversation about space, and in conversation with space. Spaces around us

co-create our understanding of them and our using of them and our writing of them as they are in the moment of existence. They engage our senses as well as trigger our memories. It is the same with other people, when we talk about spaces, whether imaginary or existing, we create our understanding of them as we carry on our conversations. We also co-create our writing of them as we go along. What I am trying to show is how this is similar between how conversation goes along, and how a design idea goes along, turn by turn

Drawing on theoretical concepts of ‘multimodal literacy’ and ‘new literacies research’ (R. Bernstein, 2011; R. Bernstein, 2011; Bezemer and Kress, 2008; Burnett et al., 2014; Cope and Kalantzis, 2012; Jewitt and Kress, 2003; Kress, 2009; Mackey, 2002; Marsh and Millard, 2000; Perfetti and Marron, 1998; Seiter, 1998), I examine the existing definitions of spatial literacy, reframing them to inform my findings. The key two reasons why this specific theoretical framework is most applicable for addressing my research question are both related to how ‘Literacies’ are constructed:

1. The concept of ‘literacies’ provides a context of understanding reading and writing in a very broad way, extending the boundaries from its origins in a linguistic context. It frames reading and writing within a myriad of non-linguistic signs, verbal expressions, gestures, and elements of the physical world, which have been shown in Chapters 3 and 4 to be an important aspect of both children’s and designer’s ways of communicating and meaning making. The multimodal nature of the studied phenomenon makes it appropriate to study within the theory of literacies, which provides a suitable framework for explaining how understanding, interpreting, creating and valuing space can be seen as reading and writing signs and symbols.

2. The term ‘literacies’ provides a space for variety within it: the multiple literacies, each specific to their discipline, profession, social group or any context that requires a specific set of skills to read and write a certain subject of interest. This is closely related to the fact that new research has shown that literacy or literacies are developed alongside other people as a social process, which was emphasised by some of the designers in the preliminary interview analysis. This opens further questions such as, how do we learn to notice and value alongside others, and bring attention to specific things.

5.1 Producing meaning through the use of multimodal signs

‘What is a sign? This is a most necessary question, since all reasoning is an interpretation of signs of some kind. But it is also a very difficult question, calling for deep reflection.’

(Peirce, 2007, p. 177)

To begin by drawing on the work of two great thinkers from the previous century: Charles Sanders Peirce (1839–1914), and his contemporary, Ferdinand de Saussure (1857–1913), I explore the meaning and implications of using signs and symbols for making and conveying meaning.

Semeiosis and Semeiotic

Peirce, a North American scientist and philosopher who coined the terms ‘Semiotic’ – the theory about signs, and ‘Semeiosis’ – the process of producing meaning through the use of signs (Fann, 1970; Peirce, 2007). He had not seen his work published during his lifetime; however his work and correspondence has been published since 1931 in various publications. I adopt Peirce’s view of ‘Semiotic’ as a theoretical approach to understanding human communication, and position the understanding of meaning making through the use of signs or ‘Semiosis’ at the core of the analytical framework. Although semiotics originate in the field of linguistics, their breadth encompasses the non-linguistic sign systems; for example concepts being encoded in the medium of sound, or physical features of landscape bearing the meaning of cultural forms (Ingold, 2000, p. 21).

Reducing literacy down to its most basic building blocks - the signs - in a sense deconstructs what and how is being said, gestured, drawn or built. Understanding what happens on the cellular level of conversation, brings an opportunity to examine the space where reading, interpretation and writing space happens in the moment. According to Peirce’s Theory of Signs, the most basic division between signs is into ‘icons’ or likenesses, ‘indications’ or ‘indices’, and ‘symbols’ as general signs (Peirce, 2007, p. 177). Despite his clear distinction between the

three, he argues that in reality, all reasoning is to some extent a combination of all three, and the borders between them are not always clearly definable (Ibid). 'Icons' are the signs that imitate ideas by possessing certain similar or identical qualities, e.g. photographs, illustrations, models, drawings – all showing some aspect of the original. 'Indications or indices' show something about the idea or thing they are depicting, by being physically connected to them; road signs and signposts are indicators because they are associated with the physical location, so we understand that information they convey is directly related to the place where they are. The last and most commonly used amongst the three, 'symbols', are the signs associated with the idea or meaning simply because we agree that this is what the meaning will be. Example of symbols are all written symbols - letters of the alphabet, or graphical symbols - flags (Peirce, 2007).

Semiology and Semantics

De Saussure, whose work was also posthumously published in 1916, constructed a theory around the study of signs or 'Semiology' in his work 'Course in General Linguistics' (de Saussure, 1983). In line with Saussurian semiology, signs are there to play the role of representation of meanings, serving the purpose of basic transmission between sender and receiver (de Saussure, 2007).

'Semantics' or the study of meaning, focuses on the relation between 'Signifiers' e.g. words, phrases, signs and symbols, and the 'Signified', their 'denotation' or 'representation' (Saussure, 2007, 1983; Saussure and Harris, 2013). He argues that representation is the core of signification, generally divided into two types: the 'external signifiers' - publically available, often material signs or symbols that we can see in the world around us, and the 'internal signified' - mentally generated, personal intentions or views about the world. In this sense artefacts – items, elements, material objects that are given a role or a meaning, act like meaning conveyors between interlocutors in a conversation. Carey frames such understanding of signs as the 'transmission view of communication' (Carey, 2007, p. 38). Closely related to de Saussure's theory, 'transmission view' is according to Carey a 'geographic transportation' of 'information, goods and people', which aims to travel through physical space as fast as possible (Ibid, p. 38). Historically rooted in religion, this type of communication is solely aimed to 'spread, transmit, and disseminate knowledge, ideas and information farther and

faster with the goal of controlling space and people' (Ibid, p. 39-40). He argues that this is still the most widely spread communication manner in today's society. However this dualistic structure was questioned and criticised by many authors that built on his work. The materiality of literacy or 'scriptive' potential of things (R. Bernstein, 2011, p. 165) may not be so simply described as carrying only one meaning or denotation.

Materials and agency in communication

'To describe elements of material culture as "scripting" actions is to suggest not that a thing possesses agency or that people lack agency but, instead, that agency and intention emerge through everyday engagement with the stuff of our lives.'

(R. Bernstein, 2011, p. 165)

Malafouris (2013) challenges the division between the above described 'signified' and signifier' in the context of material signs and the engagement of materials. He shifts the focus from 'what' a material sign means, to 'how' it enacts the meaning (Malafouris, 2013, p. 90). For the needs of his archaeological research, Malafouris reframes the semiotic perspective of the relationship between cognition and materiality, trying to weave together 'cognition with material culture' (Malafouris 2013: p.89). Through his research he shows that the linguistic semiotic system does not necessarily need to be the same in cases where conversation is taking any of the non-linguistic forms (Malafouris, 2013, 2008). His viewpoint of semiotic is relevant for understanding conversations which are particularly grounded in engagement with materials, gestures, and other multimodal types of expression. Materials may operate in various ways, depending on the process, and can therefore carry different meanings, specific to the context (Malafouris, 2013).¹⁰

¹⁰ Actor Network Theory (Callon, 1986; Latour, 1987) and the fast growing area of studying the agency of materiality, or the non-human agency (R. Bernstein, 2011; Harper et al., 2008, 2008; Malafouris, 2008; Mol, 2003; Nevile et al., 2014) influenced some methodological choices of this thesis. It is however not pursued in more depth in the context of the theoretical framework.

Another type of communication through signs as argued by Carey is the ‘ritual type’, by definition linked to terms such as ‘sharing, participation, association, [...] commonness, communion, community and communication’, originating from representing shared beliefs and drawing people together in ‘fellowship and communality’ (Carey, 2007, p. 40). In his view, this type of communication through the use of signs is embodied in physical space and the material world, for example the works of architecture, which in his words produce a

‘[...] symbolic order, that operates to provide not information, but confirmation, not to alter attitudes or change minds but to represent an underlying order of things, not to perform functions but to manifest an ongoing and fragile social process.’

(Carey 2007, p. 40)

These signs carry the ‘underlying order of things’ and show ‘an ongoing and fragile social process’, do not simply represent information created by one person, but end up creating a ‘representation of shared beliefs’ (Carey 2007, p. 40). In the context of literacies, reading, writing and interpreting meaning inscribed in different media, this provides a valuable insight into ‘how’ signs may be acting in communication.

Embodied communication

Signs can however also be ‘embodied’ - their meanings felt and shown with the body itself (Mackey, 2002; Malafouris, 2008). Using bodies as extensions for conveying meaning can be unintended, like facial expressions and body language. But in some cases it can be intentional, where the only way of conveying the embodied knowledge is through using the body to tell the story. The field of Conversation Analysis shows many examples of research on nonverbal communication: facial displays, hand gesticulation, head and body movement, or in other words using bodies to accompany communication, or using them to aid an independent semiotic act (some studies from Filipi, 2009; Laursen, 2005;

Sikveland and Ogden, 2012; Streeck, 2009; Zappavinga et al., 2010; Armstrong, 1995; Flusser, 2014; Goodwin, 2014; Seyfeddinipur and Gullberg, 2014).

'If I could tell you what it meant, there would be no point in dancing it.'

Isadora Duncan (cited in Bateson, 1972, p. 147)

Or, as Bateson interprets the quote of the famous dancer, choreographer, writer and educator, some messages simply cannot be fully communicated through words; in fact, the message becomes untrue if communicated through the wrong medium (Bateson, 1987). He frames it as a specific kind of message, 'a particular sort of partly unconscious message' which appears in a 'partly unconscious communication' (Bateson, 1972, p. 147). These 'partly unconscious' messages relate to skills of any type; he argues that the 'sensations and qualities of skill can never be put in words, and yet the fact of skill is conscious' (Bateson, 1972, p. 147). Some aspects of skills are only felt and encrypted in embodied memory, so they can only be passed on through gestures – verbal expression does not only deny them of their richness, it changes their meaning altogether (Ibid).

'Movements of the hands are capable of evoking images of objects, scenery, actions, events. They are capable of making the abstract tangible by expressing it in spatial terms.'

(Streeck, 2009, p. 4)

In Pallasmaa's view, hand gestures are the foundation to human languages, as 'language originates in early collective tool manufacture and tool use' (2009, p. 34), suggesting that language development is closely linked with the hand and the brain evolving together. He discusses the gestures of the hand in the context of art, craftsmanship and architecture, drawing parallels with Sennett's work on craftsmanship (Sennett, 2008), discussing how bodily actions of the hand and imagination are inseparable. He shows examples and quotes various artists saying that material dictates what can be done with it and how - the material almost having its own life. He quotes Brancusi: '[...] we must not try to make

materials speak our language, we must go with them to the point where others will understand their language.' (Ibid: 54). Being in 'harmony with the material' is important to allow our bodies to 'see through fingertips' (Ibid: 55), the reason why interacting with actual physical models is always more important than creating two-dimensional visual representations. In the context of creating architectural models, he argues that 'models are used [as a] medium of thinking and working' (Ibid: 50), and that 'the three-dimensional material model speaks to the hand and the body as powerfully as to the eye, and the very process of constructing a model simulates the process of construction' (Ibid 58). When crafting anything, the connection between the hand, the mind and the tools used affects the way in which the actions unfold.

'To argue that for the purposes of drawing an architectural project the charcoal, pencil, ink, pen and computer mouse are equal and exchangeable is to misunderstand completely the essence of the union of the hand, tool and mind.'

(Pallasmaa, 2009, p. 50)

5.2 'Literacies' as a socially developed construct

'Literacy is primarily something people do; it is an activity, located in the space between thought and text. Literacy does not just reside in people's heads as a set of skills to be learned, and it does not just reside on paper, captured as texts to be analysed. Like all human activity, literacy is essentially social, and it is located in the interaction between people.'

(Hamilton and Barton, 1998, p. 3)

In the last decade, a large body of theory and research has been done in the field of 'New Literacies' studies and research (Burnett et al., 2014; Merchant, 2009; Pahl, 2004; Pahl and Rowsell, 2006; Rowsell, 2012; Street, 2003). This area of research frames literacy much broader than being able to read and write words;

they even discard the singular form of the noun, describing 'literacies' as multiple, various and appearing across multiple modes and media. Literacies extend the boundaries from their origins in linguistics, to something much broader. Rather than something people 'have', it is a process done through social interaction, evolving every day, through various media, multimodal signs, and envelops the ways in which we read and write things that are not necessarily language.

The term 'literacy' can be defined in a 'narrow', 'broader' or 'extended' sense, as Perfetti and Marron argue (1998, p.4). It is the latter, the 'extended literacy', which encompasses the widest ways of understanding literacy, where 'reading and writing may not even be a critical part of literacy' (Perfetti and Marron, 1998, p. 4). I depart on this exploration by drawing on their concept of 'multiple literacies', referring to having reached a certain 'level of achievement in some domain, an extension of basic skill to reasoning and discourse' (Ibid., p.5), and learning the basic elements of the 'writing system' in question (Ibid., p.30), when defining the notion of 'spatial literacy'.

New literacies studies bring an important shift in former belief that reading is isolated from the everyday life and other people. They position literacy as a 'socially developed' construct, which is developed 'in and through the company of other readers, not simply how to decode but how to place ourselves in relation to a particular text' (Mackey, 2002, p. 4). Clark in a similar manner argues that literacy and language use embody both individual and social processes (1996). Not only does that mean that we learn to read and make critical evaluations through the company of other people, but everything that surrounds us, including physical space as a medium. Many authors focus on the ways in which popular culture, television, digital media and the internet affect the development of new forms of literacies in today's society (Kress, 2003; Marsh and Millard, 2000; Merchant, 2009; Rowsell, 2012; Seiter, 1998), giving all aspects of our daily lives a much more important role in influencing our literacies than previously believed.

Developing literacies is a very complex process as new literacies studies continue to show, and they develop in daily life through daily activities, where often there are other people involved. In this way, specific languages and literacies develop in communities that share, for example, a profession or interests; Hamilton and Barton write about the development of what they call 'local literacies', how a specific type of reading and writing develops within one community based on geographic location (Hamilton and Barton, 1998, p. 7). Young mentions similar

types of communities based on a shared language or interest: speech communities, virtual communities, discourse communities, communities of practice, cultural communities (Young, 2008). Such communities have at least one thing in common, they engage in something together, they interact, share an initiative, and they develop a shared language, style, and routines to express a shared identity within the group (Barton and Tusting, 2005). They argue that mutual learning about the 'sharedness' happens between the agency and structure of interaction (Ibid.), comparing literacy development alongside others in the context of social learning. Conditions for social learning are specific within the social and cultural context, which defines the kind of behaviour which is rewarded and sets the rules of the social environment (Miller and Dollard, 1949).

In the context of literacies amongst young people, Williams (2009) discusses a rapid rise in popularity of online platforms for communication. Young people are surrounded by collaborative and interactive online communities, which allow them to develop new types of literacies (Ibid.). Using popular culture and multimodal communication tools freely accessible on the internet allows them to be connected to their peers, music, videos and other popular contents in a participatory manner, using 'graphic, verbal, written and other means' of expressing themselves on a daily basis, at any time (Williams, 2009, p. 199). All skills Williams talks about, and all surrounding factors add to the complexity of developing literacies alongside others, making it a challenging task to explore, yet unavoidable in teaching literacies in the modern society. He suggests that literacy education should rethink its curriculum, beginning with reframing and investigating literacy acquisition from the viewpoint of multimodality and interactivity that surrounds it (Ibid.). How this shift into an imagined online space from the real, physical space affects one's skills to read and write space, would be an interesting topic for further research. However it cannot be omitted when studying young people's spatial literacies, and how they might be affected by the online landscapes, which lack some tangible aspects of real spaces, but allow for many opportunities for imagination and new ideas about what space is. The reason for internet communities' growth in popularity is partially grounded in the fact that they are located in the 'cyberspace', which can be accessed from anywhere and at any time (Ibid.). Williams' views on 'cyberspace' can be supported by some qualities of physical spaces, which encourage formation of a community of practice. Harris and Shelswell argue that a positive sense of place is

achieved by being able to establish one's own place in the room and use the same equipment (Harris and Shelswell, 2005). The ability to re-arrange and occupy a room by one's own choice is a form of empowerment in itself, and it reduces the feeling of being under power from someone else (Dovey, 2008). These are all qualities that an online environment provides for its users on different levels, which can partly explain why online culture is thriving in contemporary society, playing an important role in forming literacies alongside other people.

5.2.1 An overview of definitions of 'spatial literacy'

'It is a language, but.. Well when you say language, it doesn't mean that if I am talking words, if they are talking gestures, or models, we are still communicating. So it is spatial communication. But I would think spatial communication.. on the way to spatial literacy. I would make a spectrum.. I would put it under the umbrella of communication, so you begin by exchange of simple words, just words, in a familiar context, and gradually you use spatial, you use visual communication, material communication, gestural communication, and the objective is spatial literacy.'

(Marianthi Liappi, 2015)

There are many definitions of 'literacies' that refer in one way or another to the concept of 'physical space'. 'Urban literacy' (Havik, 2014, 2006), 'Gaming literacy' (Goodchild and Janelle, 2010; Pearce, 2008), 'Artefactual literacies' (Pahl and Rowsell, 2010), 'Design literacy' (Heller, 2004) are some that most commonly appear in recent literature.

The following section focuses on the definitions directly referred to as 'spatial literacies', exploring different views on what it means to be 'spatially literate', and to 'think spatially' with special attention to the skills they involve and the communication media they list as relevant for being able to read and write space.

Beginning with the definition used by a research project 'Raising Awareness of Values of Space through education' (R.A.V.E. Space) that I was involved in,

spatial literacy is framed as a skill to ‘use and make maps and other graphical two and three-dimensional representations of physical space’, and the ‘understanding of abstract, artistic and other symbolic ways of representing attributes of physical space’ (Demšar Mitrović et al., 2007, p.40). The R.A.V.E. Space project focused on bringing into formal education more aspects of spatial thinking, which would be linked to being able to think critically and communicate opinions in the context of spatial development and decisions about space in further life:

‘[spatial literacy includes] being able to use, make and connect different data and their interpretation for the use of defining the state, changes and decisions regarding development in space; and to be able to analyse the current state, define problems and solutions; to be able to define the right balance between preservation and development, to balance different opinions and to cooperate when executing common tasks.’

(Demšar Mitrović et al., 2007, p. 40)

The fact that critical thinking is key to spatial literacy, is also suggested by a survey conducted by the National Research Council (2006). A ‘spatially literate student’ is able to ‘use the properties of space to communicate, reason, and solve problems’ and also able to adopt a ‘critical stance to spatial thinking’ (National Research Council, 2006).

Golledge’s definition of ‘spatial literacy’ is ‘the formal ability to think spatially and adopt an explicitly spatial metaphor for problems and relationships’ (2003). Golledge describe many skills that include reading both spatial representations such as two-dimensional maps, GIS systems, other people’s imagined maps; as well as features of space itself: for example the three-dimensional space, distances within it, meta-features such as cultural aspects, and landmarks:

‘Spatial thinking includes translating from one dimension to another, realizing distance properties, comprehending orientation and direction, using frames of reference, realizing spatial geographic associations, realizing that nations are "carved" into regions that may be geographic, economic, social, or political, being aware of, and using effectively, the

spatial networks of roads and highways, recognizing systems of landmarks that anchor one's cognitive maps, and developing map-reading skills.'

(Golledge, 2003, p.1)

Goodchild suggests that 'spatial thinking' is 'an ability to visualize and interpret location, distance, direction, relationships, movement, and change through space' (2006), therefore focusing on manipulation of spatial representations, constructed in one's mind or represented in a medium. In a similar manner, Stuart Sinton et al. frame the understanding of 'spatial literacy' in the context of representations of space such as 'maps, mapping, and spatial thinking to address ideas, situations, and problems within daily life, society, and the world around us' (2013). Project Spatial Literacy in Teaching similarly defined 'spatial literacy' as including 'issues to do with distance, orientation, navigation, spatial networks, understanding spatial interrelationships, changes in dimension, frames of reference, map-reading and landmark recognition' (2007), focusing on reading representations of space.

Blake argues that 'spatial literacy' is an ability to 'utilize space and understand its properties,' which is essential for 'communicating effectively and making rational decisions' (2006). She suggests that apart from using this ability to accomplish everyday tasks like 'gauging the distance when parking a car or correctly interpreting furniture assembly instructions,' people use 'spatial literacy and spatial thinking' for accomplishing many activities at school and work: 'people use spatial thinking to generate graphs and charts, calculate playing strategies in football, soccer, baseball and basketball, design presentations, create drawings or 3D models, measure distances and plan travel routes, read an X-ray. ' (Blake, 2016)

Authors agree that almost every science or professional field adopts 'spatial thinking' in one way or another. Goodchild suggests that 'spatial concepts are fundamental within not only geography, math, and natural sciences but also the arts, humanities, and social sciences' (2006). Golledge argues that 'virtually every knowledge domain contains spatial metaphor' (2003), demonstrating the wide

array of sciences that use space as a medium to represent some aspect of their messages:

'In the arts, sculptors and painters spatialize their ideas of form and emotion. Choreographers carefully spatialize ballet movements and dance steps. Novelists create striking word pictures of places in which characters act and interact. Biologists map out genetic structures in double helix form. Astronomers search for spatial patterns among the stars. Physicists claim to be the king of spatial thinking, and their domain covers both abstract and real spaces. Mathematicians not only have geometry, topology, and integral calculus as spatial structures, but embed space in number sequences'

(Golledge, 2003, p.1)

The implication of various fields of science and practice developing their own specific views of 'space', may be the increased complexity when these views are confronted through discussion, requiring immense negotiation to see things in a similar way.

5.3 Theoretical framework: the definition of ‘spatial literacies’

The culmination of this chapter is the definition of ‘spatial literacy’ as I understand and use it as the basis of a theoretical framework in this research:

Under the term ‘**spatial literacies**’ I understand a set of individual skills and capacities to ‘read and write’ space, which may differ from one person to another. The skill of ‘reading space’ involves ‘reading actual space’, or spatial features in the real world, as well as ‘reading representations of space’, such as verbal utterances, gestures and artefacts representing spatial features or qualities. The skill of ‘writing space’ may refer to directly constructing a feature in actual, real-world space, or indirectly ‘writing’ imagined features and qualities by the use of verbal utterances, the written word, drawing or manipulation of objects. These skills exceed the limits of a language used to talk about space; it is also using space as a medium for communication.

The fact that ‘spatial literacies’ may be specific to individuals, is the main reason I choose to use the plural term (‘literacies’). The differences show themselves most clearly when conflicts about spatial use arise, and when individual ‘spatial literacies’ clash or create synergy when they are being negotiated.

5.3.1 Reading and writing space

‘We adults could scarcely find our way in the world, either literally or metaphorically, if no one told us anything. Imagine planning a journey to a distant city you’ve never visited before. Even to conceive of that plan-to know of the city’s existence and to want to see it-calls for a wealth of geographic information that only other people can supply. Deprived of the testimony of others about the land in which they live, our spatial horizon shrinks to the places we have already seen and those we can just see ahead of us.’

(Harris, 2012, p. 1)

We all 'write' spaces in our imaginations, by shaping assumptions and evaluations about them, which make the newly 'written' spaces very intimate and individual. We constantly do our thinking, forming opinions, making assessments and decisions about space, on our own. This thesis section aims to summarize preceding sections to find useful ways of exploring for this process, hereby called 'Spatial literacy', from within the world of social interaction.

In their study, *Learning to think spatially*, the National Research Council lists three key components required for spatial thinking: space, representation and reasoning (Blake, 2016; National Research Council, 2005; Witham Bednarz and Kemp, 2011). 'Space' or the 'ability to negotiate space' includes understanding relative relationship between two places in terms of distance, imagining space in various dimensions, assessing and calculating distance, and understanding systems of coordinates. 'Representation' involves viewing or reading space, including the ways in which space is represented in maps and other cartographic representations. 'Reasoning' includes all skills related to making decisions in and about space based on how well space can be imagined in one's mind. That includes imagining different ways to get from one place to another, how cartographic representations will look in actual space, and how a newly designed space might look when completed (Ibid). The latter two skills, 'Representation' and 'Reasoning', directly relate to what is assumed in this research to be 'Reading' and 'Writing' space. The first one, 'The ability to negotiate space', is a skill required to be able to read and write space in a certain context, relevant to the culture and agreed concepts by the society. In this sense, 'Space' is a prerequisite for both 'Representation' and 'Reasoning', when we try to communicate facts about space to other people, who are also familiar with certain rules of the cultural context (such as dimensions, distances, coordinate systems etc.).

Reading physical space and the objects inside it is described by Douglas and Isherwood as making connections through 'scanning a scene and sizing it up' (Douglas and Isherwood, 1979, pp. 48–49), entering into a process of 'matching, classifying and comparing'. In the context of assessing and comparing individual elements, these processes help to read and understand patterns in the physical world. A user of a city will in a similar way scan a street or a building in front of them, looking for patterns and interpreting how it can be used in ways appropriate to their needs. This way of reading space is similar to reading a language, as the words, too, have to be scanned, classified and compared in order

to make the decision of what to do with them and how to interpret them (Lawson, 2001). Extending the thoughts of Douglas and Isherwood even further towards the spatial domain, spatial features can be seen as 'goods for thinking', used as a 'nonverbal medium for the human relative faculty' (in Cross, 1982, p. 224).

The tactile aspects of spatial literacy (Mackey, 2002, p.10) are embedded in the ways in which we can interact with spaces, or what the spaces allow us to do with them. This concept of 'affordances' was first coined by cognitive scientists, studying how objects allow us possibilities of certain actions (Norman, 2013). This idea has been applied to spaces – what actions certain spaces afford us to do – and therefore it has been argued that they give places a certain agency (Cele, 2006). Such a way of reading spaces is embedded in everyday life, and everyday actions (Jones and Cloke, 2008).

Through her research of children's literacies practices, Margaret Mackey shows that the definition of 'reading' has long exceeded its primary dependence on printed words on paper, and 'decoding of the alphabet, [...] the interpretation of complex instructions and descriptions, [...] the development of entranced absorption in a fictional universe' (Mackey, 2002, p. 3). She argues that what we understand as reading is becoming more complicated than ever before, by still being largely reliant on the alphabetic reading, it includes processing information from various other media which can be written, produced as a sound, or shown in pictures and videos (ibid.). Drawing on Ellen Seiter's ethnographic research into new media audiences, she goes on to show how all interpretation of texts is intertwined with our everyday life experiences, and not isolated from them, happening in some exclusive interpretation zone (Mackey, 2002, p. 4). As Seiter puts it, reading any type of media is 'embedded in the routines, rituals, institutions – both public and domestic – of everyday life' (Seiter, 1998, p. 2), positioning literacy firmly within the realm of everyday, moment-to-moment life. In our lives today, we are surrounded by texts which are increasingly becoming more interactive and offer new ways of engaging us as both the reader and the writer –creating a space where the reader's traditional position of a 'receiver' moves closer towards the role of a 'director' of the shape and medium of the text itself (Ibid., p.2). Cele shows that children are naturally accustomed to using all their senses in experiencing space on a daily basis (Cele, 2006, p. 51), a habit that is socially unacceptable for adults (Ibid:53). Wright finds that 'imagination, creativity, fantasy and play are fundamental components of children's art and

meaning-making' (Wright, 2010, pp. 8–9), and that children best communicate the meanings, produced by their imagination. In this way, within their minds, children build their own reality through stories, making 'mental models' of experiences through narratives (Gallas, 1994, p. xiv), communicating them by 'gestures, looks, and the set of our mouth' (Gallas 1994, p.158). The rich world of children's meaning dwells in the 'free-form narrative' (Gardner, 1991).

Kress and Van Leeuwen argue that multimodality in the modern day can be much more interactive and is blurring the lines between who is the author of 'discourse, design, production and dissemination of communication' (Kress and Van Leeuwen, 2001; Pink, 2002). They compare arranging one's home with writing a text: 'by transforming their homes, people create their 'house as [multimodal] text'. This involves people in processes of interpretation and articulation, which are 'semiotic actions in which discursive practices are evident' (Kress and Van Leeuwen, 2001, p. 40).

The interpretation of the meaning of the material world is done by reading into the elements beyond their physicality and utility, exploring deeper towards their 'abstract requirements' (Cross 1982: p.224). Letters and words, as well as corners, benches and swings, go beyond their direct shape and meaning, into their abstract meaning, and what they might mean in the context of other words and the accompanying text, what memories and prior experience it awakens; that is, more than what was intended when written by the author. As Green puts it, 'our experiences [of spaces] cannot be relived, only retold; they remain an interpretation of a moment in time. They are interpretations on the part of the teller as well as on the part of the receiver; personalised and objectivised on both sides' (Green 2011: 119). They are also reflected in how we choose to communicate them to others, not only through words, but through using these spaces yet again and again.

An example studied by Wilkins shows how an Australian Aboriginal group Arrernte used sand-drawings to communicate spatial qualities as addition to verbal and gestural communication (Wilkins, 2016). Their study focuses on investigating the 'nature of spatial description and conception from a cross-linguistic and cross-cultural perspective', showing how sand drawing is used as an iconic part of language to show events happening in space (Wilkins, 2016, p.253). He notes how the author of the sand drawing uses smoothed out sandspace as a

canvas for narration, and then draws ‘conventional iconic signs’ (Ibid: 256) that look similar as if the actual objects were placed on the sand. The visible features of things, spaces and movement are represented using the two-dimensional space, as well as manipulating some three-dimensional properties of sand to communicate some specific features such as the weight of the object (e.g. heavier objects leaving deeper imprints than lighter ones) (Ibid., p.259). This study shows an example – with parallels to the design process - of writing space in the context of communication, and using it as part of the conversation.

A discussion on reading and writing space could not omit the work of Christopher Alexander, who in 1977 introduced a ‘Pattern language’ consisting of city elements, which he described as existing in space and being able to be recognisable as such (Alexander, 1977). His intention was to propose a core solution for a specific problem in the environment, which is part of a certain pattern, and then the solution can be applied to many different cases of the same pattern elsewhere (Ibid). I choose this example because it illustrates how we can read space in very different ways. Where a professional eye trained in dealing with space sees patterns, problems and possible solutions, another eye will see the things it needs to see in order to solve the immediate problem – perhaps looking for a place to sit or play or just a place to look at. This way is how I understand ‘reading space’, an interpretation of sensual elements perceived in space in an individual way. Christopher Alexander saw cities in a certain way, a trained architect, but also chemist, physicist, mathematician, and an academic, translated the cityspace in a much different way than another person would.

5.3.2 The implications of the theoretical framework for data analysis

In the context of this research, I frame the term ‘Spatial Literacy’ as a set of skills and abilities that allow people to ‘read’ space, in the sense of how they interpret its qualities and how they use the space; and the skills to ‘write’ space, in terms of how they accommodate and reshape space in order to fit their needs.

These skills and abilities are essential for involvement in any kind of spatial design process, and they manifest themselves in different ways. I draw on the literature from the fields of human communication, language, gestures, multimodality, semiotics, semiology and crossing over to literacy and multimodal

literacies, to link existing concepts about how people need to be literate in a specific context they are communicating in, and how that affects the existence of various types of literacies.

I explore and describe ways in which such literacies are used in the context of child-designer interaction, and adopt the term 'Spatial Literacy' as a bridging concept between 'Space' as the subject focus in conversations within spatial design processes, and 'Literacy' as specific set of skills for reading, writing, interpreting, using, describing and writing in the broadest sense of meaning.

In order to try and understand the complex, multimodal and multi-layered nature of a child-designer interaction, I adopt a framework combined from concepts taken from the area of 'new literacies studies' (Mackey, 2002), focusing on readers' attention placement in the world of interconnected multiple mediums of reading. Observing how we bring attention to certain things as opposed to others, helps us understand how we notice and value certain elements in our surroundings, all of which carry some meaning to us (Heath et al., 2010; Mackey, 2002).

Mackey uses the metaphor of 'ecology' to represent the complexity of surroundings, which 'shift and change with every new development' (Ibid :11). She suggests that respecting the complexity of the situation allows a 'rich and messy description of textual interpretation to emerge' (Ibid :5). Drawing parallels with the focus of this thesis, the collaboration between children and spatial designers may also be seen as a process embedded in a complex situation—a combination of multiple modes, and may be interpreted as a parallel to Mackey's 'close-up exploration of specific encounters between particular individuals and unique texts.' (Ibid., p.5). The focus of my exploration is a specific encounter between two 'readers' - the child and the designer, and the 'text', which is in this case a complex mixture of the instructions how to 'read and write space', the materials and tools provided to facilitate the 'writing of space', the location where the 'spatial reading and writing' is held, other 'readers and writers' present at the situation and so on.

In other words, I am interested in how this form of 'spatial literacy' is being manifested and negotiated through multimodal dialogue. As Mackey argues, literacy is partially a very innate and intimate quality that grows and changes as we live and learn, but a large part of it is constructed from what we learn with and

from other people (Mackey, 2002). Dissecting the dialogue by watching it over and again many times, provides an otherwise unseen detailed insight into how participants construct their talk, supported by gestures and the use of artefacts on a moment-to-moment basis within interaction. This approach to analysis allows me to trace the moments when participants are using their ‘spatial literacies’. The signs of when ‘spatial literacy’ is being used, i.e. when participants are ‘reading and writing space’ are hard to define and very much rely on my own intuition based on experience from practice, which is a method quite vulnerable to questioning, however, I frame it within the field of abductive reasoning and intuition in research (Bajc, 2012a; Coffey, 1999; Haig, 2005; Magnani, 2005; Pink, 2015, 2013; Procter, 2013).

5.3.3 Components for observing communication

The adopted theoretical framework provides me with grounds to apply the reviewed theory to observing and experiencing communication. The practical implications of the theoretical framework for analysis are summarised in the following table:

Spatial designer		Child participant	
Spatial values (likes and dislikes) expressed using Spatial Literacy:		Spatial values (likes and dislikes) expressed using Spatial Literacy:	
Reading space	Writing space	Reading space	Writing space
-how	-how	-how	-how
-what	-what	-what	-what

This table shows the focus of analysis: the question of ‘what’ they are representing and how that meaning is understood and negotiated between conversation participants. Addressing this question will help me contextualise the ‘how’ within the values and preferences of the participants, as reflected in what they have selected to be told or understood.

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6. *Analysis: Live design case studies*

This chapter is a portrayal of child-designer design interactions, constructed through descriptions and analyses¹¹ of communication observed and experienced in three live design case studies:

Cologne: ‘Atmosphere as a participative design strategy’

Ljubljana: ‘Finding video voice in re-imagining the school grounds’

London: ‘Imagining a new play structure in school open spaces’

The first (Cologne) and the third (London) case study sections begin with a description of project background, focusing on how this particular session fits within the wider design process, and showing the key intentions the designer wants to achieve with the selected communication methods. Project backgrounds draw on written and visual data collected from the architects and their practices (the transcripts of the public lectures they presented as part of the larger research project in Bristol and Sheffield in early 2015, as well as the semi-structured interviews in which they discuss their design approaches). These project background descriptions are followed by an ethnographic narrative, a ‘thick description’ of observed literacies and communication on the day in as much detail as possible (Denscombe, 2010; Ellis et al., 2010; Micciche, 2007; Wall, 2014). Ethnographic narratives focus on how space is communicated by participants and the designers. This section incorporates my reflections as a researcher and as a designer, therefore it is printed in a different font than the rest of the thesis, to denote it as an evocative and personal narrative (Bochner and Ellis, 2016; Coffey, 1999; Ellis and Bochner, 1996; Pahl, 2004; Pink, 2015). Alongside drawing on my impressions from being there and observing the sessions in action, I here draw mainly on the data produced on the day through the short-term, ‘focused ethnography’ approach (my field notes, my diaries, informal conversations with children and designers, and collected visual materials).

My own design project in Ljubljana, where I am involved both as a researcher and one of the lead designers, is written in the tradition of autoethnography and evocative personal narrative (Ellis, 2009; Ellis and Bochner, 2013, 1996; Humphreys, 2005; Mizzi, 2010; Muncey, 2010; Nadon, 2009; Quicke, 2008). In writing this narrative, I follow the ‘ten precepts associated with the turn away

¹¹ Here I follow Pink’s argument that in a contemporary context, there is no more clear boundary between data collection, data presentation, and data analysis (2013).

from realist, positivist, and modernist social science and toward the ideal of a reflexive, relational, dialogic and collaborative research process grounded in a distinctively interpretive social science' (Bochner and Ellis, 2016, p. 55), which are listed in the Methodology chapter. The project background section is incorporated in the autoethnographic narrative.

Within the final section of this chapter – Design talk in interaction: looking at the structure and content of interactions between children and designers when negotiating spatial literacies – I analyse the 'actions' of talk-in-interaction, drawing on the approach of CA, described in more detail in the Methodology chapter. This analytical approach allows me to look in more detail at the ways in which designers and children communicate about space. I extract and analyse patterns emerging from examples, focusing on how designers and children use talk, gestures and physical artefacts (drawings and model building materials) to do design together. This section is largely based on the data analysis from the first and the third case studies (Cologne and London), due to the nature of data production methods adopted in the context of focused ethnography.

The video data created within the second case study (Ljubljana) is specific within the case studies, as it was produced as part of the design process and with the focus of an autoethnographic approach to addressing research questions. It is framed as a participant action research, which works on another level, as the participation is done for the design project, while I actively take part as a participant designer. It is not just a live case study, but a live engagement in the liveness by the researcher - allowing for a novel and highly engaged approach to design research. As such, it influences my role as a researcher when analysing the other two case studies after having immersed myself as a researcher into the experience of the live designer role – the roles I observe as a researcher in the two other case studies of an observer.

Still on top of that, because video medium was used as a method for design participation with children, some of the data of design conversations between me and the children is suitable for CA analysis, and can contribute to addressing research questions further by illustrating the patterns that are repeated from other case studies. The child participants used video recording technology as a method to record their own critical thoughts and new design ideas about school open spaces. This approach in the second case study recorded a slightly different type of interactions between children and designers to the ones recorded by

researcher's cameras in the first and the third case study. In the case of Ljubljana, video medium is used as part of the design method of reading and writing space directly on the video recordings. In this case the reading and writing of spaces occurs in front of the camera as if it is being enacted for future viewing – hence the dialogue and interactions about space are directed at and focused on the camera.

In the case of Cologne and London case studies, the children and designers orient their interactions towards the written, drawn and modelled spaces, while being recorded and observed by researchers' video cameras. Therefore CA approach, which focuses on naturally occurring dialogue between people, is used in all three parts of Cologne and London case study structure; however it is only applied to the second part of Ljubljana case study ('Children doing the design activities') as this was the only stage where video recordings were used as part of design process in that case study.

6.1 Introduction to case studies

"Saturday February 12th 1927

[...] The method of writing smooth narrative can't be right. Things don't happen in one's mind like that. We experience, all the time, an overlapping of images and ideas.'

From Virginia Woolf's Diaries (Woolf, 2013)

I am touched when I come across this thought from Virginia Woolf, as it quite accurately reflects how I feel about writing up my research. I really struggle with writing up what had been brewing in my head for over three years now, and I sometimes find it quite crippling to try and frame it all within a neat story. A story that attracts and draws in the reader, while still keeping the rigour and thorough credibility of a research piece on a doctoral level, and a story that constructs a whole new reality from the pieces of data and selected bit of analysis. This story however is only a vehicle for reporting all the new knowledge, research findings, explorations, thoughts, images, ideas and accompanying emotions. In my

experience, it happens all at once, one thought leads to another, and while they seem unrelated to each other, they illuminate a finding or a solution to a problem that seems to be even less related to either of the first two ones. The mind seems to jump and seek connections in places where I do not take it consciously or deliberately, and that is why it is so difficult to write a thesis in a linear narrative. Images, ideas, memories, sounds, they all overlap and take me through the journey that is this research. But in this chapter, these all come in with an even stronger clash, as I experience case study events, people, images, and conversations, on a much more personal level than when I am dipping into literature when constructing a theoretical background within the previous chapters. I fail to find a way to represent these connections in a way that would do the thought process justice, so I decide to follow the chronological order of how events happened on the day of observed workshops. I keep that as a structure, while I let my reflective and analytical mind run freely immersed in data and using the selected analytical approaches, just hoping they are appropriate for what I am trying to do. In some instances they work fine, yet in others, I am faced with the need to amend or even change them completely. This then leads to revisiting and reviewing my methodology and literature and then back again. It is an iterative process, and the only way I find appropriate to make it visible in the thesis, is to reflect on it occasionally. And this chapter is the best example of how the iterative process of interlinking thoughts and images happens with every word that I write. The overall context is very subjective and is based on my observations as a person, as a practitioner, as a researcher and as a PhD student.

'[...] ethnographer's final account of the culture or group being studied is more than just a description - it is a construction, a crafted construction which employs particular rhetoric skills and which inevitably owes something to the ethnographer's own experiences'

(Denscombe, 2010, p. 85)

To counterpart this 'crafted construction' emerging from my lived experience of the workshops which reflects who I am, I pair it with a tool to analyse the recorded communication. CA (Conversation Analysis, explained in more detail in Methodology chapter) is used to highlight some aspects of 'talk-in-interaction' in

this specific context. It is used to complement the broad, subjective, descriptive and immersive nature of the narratives produced following the approaches of ethnography and auto-ethnography, highlighting or emphasising some key points raised by the narrative. The way the two approaches work together is by the reader being immersed in the broader context, and at the end focusing on small details, or 'zooming into data' to show in small grain the structure of design talk in interaction. As shown in literature review, verbal communication plays an important role in design. However it is strongly linked with how bodies are used to communicate embodied messages, as well as visual means such as drawings and model making. CA focuses on the granular level of conversation, taking into account all means of communication used by children and adults, following the structure of workshops, the nature of tasks set up for the children, and looks in great detail at the sequence in which communication happens in design. CA is applied to audio-visual recordings of the sessions in order to 'zoom into' conversational moments, expand them in detail and uncover some of the main interactional features of architect-children interaction (Antaki, 2011a; Peräkylä, 2011; Sacks et al., 1974; ten Have, 2007).

I am aware that my very presence at case studies influences the way the social world and participants interactions play out. And as all live case studies were initiated and designed in very different ways, so does my position within them very from case to case. But the question that arises is also this: How is my position as an ethnographic observant depending on the specific roles within case studies? Is it possible to observe the social world neutrally, without influencing it? By minimum intrusion, even a camera set should at least cause some disturbance as participants know they are being filmed. How do I deal with that?

Being an adult in a child-designer participation workshop brings certain role dynamics that can be approached in a variety of angles, in detail discussed by Christensen and James (Christensen and James, 2008). The approaches may vary from adopting the 'least-adult research role' (Mandell, 1991, p. 40), arguing that all differences can be minimised to the extent that they do not affect interaction, while Mayall shows the differences should not be ignored, but worked

with (Mayall, 2008). The adult-child distinction helps Mayall to frame her research, asking children to help her understand their views of their worlds and realities (Ibid.). She takes the role of the different, the adult, and brings that up with children when she talks to them. Corsaro and Molinari's longitudinal ethnographic research approach, builds on relationship over a longer period of time, helping the researchers to get a closer understanding of children's perspectives (Corsaro and Molinari, 2008). Connolly argues that dualistic opposites depend on the context, and are therefore not essential for fixed consideration when planning research (Connolly, 2013).

In the three case studies included in the PhD, my role and involvement is different in each. I am a foreigner in two out of three countries where case studies take place. My own experience with participative design as a practitioner influences my perception about the process I am observing as a researcher. And finally, each case study had influenced my perception of the following one/s, through methodological revision and adapting methods and details of approaches, but more so in the experiences I had taken forward in a spiral-like iterative process.

These epistemological assumptions about the degree of researcher involvement in social reality and cultural worlds follow an underlying assumption about the nature of the topic of study – the complexity of the social world. In a broad sense, this research follows subjectivist assumptions that knowing is linked with the projection of our consciousness. Even more so, by knowing the social reality, one also creates it. As it is a challenge to know my own exact role in the social world, I will reflect on my own perceptions of it, and relevant features that might affect the research questions.

Ethical considerations

In all three case studies, the architects, the participating children and their parents were acquainted with the purpose and nature of the research project through information leaflets (see Appendix 2). Researchers were also available to answer their queries on the day of the workshop. Consent forms were sent to the

architects as well as the restaurant marketing contact person beforehand, and were given back to us signed by the children and their parents when we arrived to the workshop. The participating children and their parents were also acquainted with the purpose and the nature of the research project through information leaflets as well as in person. All of the architects included in the study agreed to be named with full names and affiliations. Pseudonyms were used for the child participants throughout this thesis to ensure anonymity.

The data produced through visual technologies used by participant children and researchers, however, raises further, complex ethical considerations. Digital visual technology is a useful tool for encouraging and eliciting conversations with children in the context of semi-structured interviews. The digital display allows children to see what they have recorded and comment on this footage straight away, on the day that it is recorded, so that their visual narratives can be immediately transformed into verbal narratives. Such an approach to communication creates a flexible space where the children choose what they want to take pictures or videos of, which subsequently directs and informs the topic of their associated verbal narratives. In the context of this research, this approach often resulted in unexpected visual and verbal content and sometimes included very personal, intimate details about the children's lives. On the one hand, these situations help to create good relationships between the children and researchers in an interview setting and also to support children to raise issues that they feel are relevant, which might otherwise be overlooked by the researcher. On the other hand, the researcher has to ensure that the narrative that is elicited and captured is within the scope of the research project and its associated ethical approval and consents. The researcher, therefore, needs to find the right balance between keeping the flow of the narrative in the child's domain, and yet guiding the topic back to that of the interview. I found this to be a tricky balance, in constant negotiation and touching upon many ethical considerations, for example: which parts of the story are ok to tell the larger audience, and which stories about particular individuals, in particular situations, should be left untold to protect participants' anonymity? Where ethical questions such as the latter arose, I adopted an approach that can best be compared to what Quicke describes as 'faction': a narrative that is not 'history' but neither it is 'fiction' (Quicke, 2008, p. 7), through making cuts and alterations to the source data, while still conveying the overall 'truth' of the story. This approach helped me to keep a strong sense of

ethical awareness where further issues arose as continued with data production, and as I created the ethnographic and auto-ethnographic narratives.

Throughout the visual data production process, the children had the opportunity to express their wish to opt out of research, or simply to refuse to talk about specific visual material. Whether or not the child participants fully understood the implications of their given permission at every moment of the research process was an issue that was always in the back of my thought process in all three case studies. Participatory visual methods can greatly contribute to social science research. However, when adopting such methods, one has to be aware that despite their apparently non-invasive, non-confrontational nature and the move to encourage children to interpret their own data¹², visual methods still generate many ethical questions and require many decisions to be made throughout data production, analysis and dissemination.

¹² Which I found has many parallels with the ways in which children's ideas tend to be explored in design processes.

6.2 Cologne: ‘Atmosphere as a participative design strategy’

6.2.1 Project background

Architecture:	die Baupiloten (Susanne Hofmann)
Design project:	Children's area within a department store cafeteria
Location:	Cologne, Germany
Date:	March 2014
Duration:	One session, 90 minutes
Participants:	6 children (ages 6–9 years)
Design stage:	Feedback on proposed design ideas
Aim:	<i>'To playfully determine the user's desires and needs'</i> (Hofmann, 2015)

Locating the observed session within the overall design project

At the heart of die Baupiloten's practice ethos is involvement of users and public participation in architecture, and using ‘a sensory approach to the design of space and materiality’ (Die Baupiloten, 2016). I am inspired by the work of Susanne and her practice – besides being a practicing architect she is also an active design teacher, researcher and an active researcher in the field of architecture and participation. Having read about her previous work and design philosophy I became increasingly aware of the importance of mixing different media to elicit from children as spatial users how the places make them feel as the basis for why they want something, as opposed to directly defining what they would like to design in space (Hofmann, 2014a, 2014b, 2009).

The restaurant management – the client in this design project – arranged for seven children to participate in two design workshops with Die Baupiloten. The workshop we attended was framed as a feedback session, and a follow-up design

stage to the one done previously. About a month before we joined them, they had been asked to attend the first workshop, where they had created their own ‘Dreamworlds’ as responses to a mythological story about ‘Cockaigne’ or ‘The land of milk and honey’, focusing on how their dream place would feel. The children were offered different types of materials such as aluminium foils, old phone and computer keyboards, colourful papers, wires, sponges and many others and asked to create their ‘dreamworlds’ in shoe boxes. Besides building a micro world, they were also asked to give the world a name and give a short descriptive narrative or story about the world, contributing to the architects’ understanding of how the imaginary space makes the children feel. This method was intended to help participants free themselves from usual ideas about space, and help them communicate through a sense of atmosphere: focusing on what especially made them feel good in a certain place, and also what activities they would like to do in such a place (Hofmann, 2014a):

‘Build your world’ is kind of our basic workshops, where we try to get closer to the desires of the kids. We bring collage materials of all sorts of spatial atmospheres, and the kids just choose what they like, and we also ask them for a brief. So since this was a restaurant we asked them: ‘how would you imagine and like to be in the land of milk and honey?’ It’s a workshop suitable for many people and age groups, but also for kids, or we use it also as a supplementary workshop within a larger participation process which is easy to implement and entirely versatile. And the aim is to playfully determine the user’s desires and needs.’

(Hofmann, 2015)

Die Baupiloten took the worlds and ideas the children had produced in the first session, and used these as the basis for producing a design proposal in a form of a physical model and rendered 3D presentations of specific views within it. The designers showed the children the model and views to explain how they had interpreted their previous ideas into spatial elements. The model was presented as one version of how these imagined ‘dreamworlds’ elements could be combined together in a design proposal, but this second workshop also encouraged the children to experiment with individual elements of the deconstructed model of

this proposal, to combine them and test them in ways new to the designers. One of the architects described this workshop as another layer of interpreting and understanding children's ideas about the restaurant design. While the 'dreamworlds' were intended to show the designers which themes the children prioritised, the second session allowed them to see how children responded to their proposal.

Communication tools and intentions of the workshop

The children were shown the model and photomontages of the design proposal and asked about their thoughts and ideas about it. But the main body of workshop work happened in the model-building workshop, where further possible alternatives to the proposed design were explored by using parts of the deconstructed model. These individual elements of the proposed model, or 'modules'¹³, were all individual elements of the design proposal model. Each 'module' represented one specific feature from the design proposal, for example 'a spy mirror' or 'staircase'. By exploring new possibilities to combine the modules with one another, as well as adding to the modules some extra materials (such as colourful plastic sheets, sponges, mirrors and aluminium foil), the further possible ideas were explored, combined and created (Hofmann, 2014a).

The session was structured around 3 'workstations' which the children rotated around, spending around 20 minutes at each workstation in pairs of two children:

Workstation 'modules': Susanne first introduced the available elements to the children, then they were asked to combine them into spaces/places they would like to be in. At the end they were asked to place little human figurines in places where they would most like to be, and wrap up the session by naming the structure. Throughout the session Susanne asked for reasons why children chose a specific element or why they want something where, and she wrote it down.

Workstation 'model': Martin first read the children's narratives from the previous session on 'Dreamworlds', and then they looked at the model of the design proposal together. The children were asked to place human figurines into places on the model, where they would most like to be.

¹³ 'Modules' is my translation for 'Moduls' as used in German by the architects.

Workstation 'figurine theatre': A station where I interviewed the children (in German) about the design process they were taking part in. The main method used here was photo elicitation, using photos taken by researchers while children were engaged in design process, and a method of roleplay by using small plastic figurines to represent themselves and other participants in the design process.

My role in data production

In this first case study I see my role as a researcher, an ethnographer and as part of a collaborative design process of designing with children. I was producing data in a specific way, by being present on the day, meeting the architects and the children. However I did not observe and experience the activities taking place at other workshop stations. That was due to time limitations so my 'interview' station was incorporated as part of the schedule of the day. While the architects worked with children on the design model and building modules, I interviewed children in a secluded space of a small pop-up sunshade tent, using little figurines as interview prompts.

My role and position as a researcher and basically a person present in the case study activity can also be seen through the reflections of the children. Children with their presence, as much as the designers, are actively present in this social situation, and are helping shape and interpret both researcher's identity and role, as well as their own ones. The way my fellow researcher Maria described it in her diary: 'Our role was a funny one just standing there speaking no German and taking photos! Children commented on this during the interview, telling Maša about her 2 friends who went on 'clicking'. Although we didn't intervene actively in the workshop activities, we were definitely noticed and possibly distracted the children, especially in the beginning. Did Martin and Susanne mind our presence there? It didn't show, however it could have been the case. Maša telling them that her German is not that good, this might have empowered them, reversing child-adult/researcher power dynamics'

6.2.2 Ethnography: observing literacies and communication in Cologne case study

I take part in this workshop together with my supervisor Rosie and the project research associate Maria. We travel by train from Sheffield all the way to Cologne. It is my first time going through the Eurotunnel and I am super excited. Not only because this is the first case study and I will get to observe Susanne Hofmann do her magic, but I have also never been to Cologne and taken such a long train journey. It is amazing how traveling on land makes you appreciate the distance and the way the landscapes and the architecture changes through the journey. It is a sunny early spring day, Cologne is beautiful and I am happy.

When we arrive to Cologne we meet with our colleague Maria who arrived just before us. We take the evening to enjoy local cuisine and prepare our heads for the research activities we planned to do the following morning.

Early next morning we arrive at a large department store in the centre of Cologne, where the workshop and the project will take place. It is a fresh, brisk morning and we are the only people in this wide, pedestrianised shopping street, which I expect must otherwise always be busy and buzzing with shoppers, music, sounds and smells. After the workshop I find the street to be exactly as I imagined.

We wait to meet Susanne and her colleagues from architecture practice Die Baupiloten, based in Berlin, who are commissioned to redesign the interior of a part of the department store's café to make it more attractive for child customers. This café seems like a self-service type of restaurant where people take trays and help themselves to a wide variety of what looks like truly scrumptious lunch and desert options. The restaurant already has a play section located in an area on the side of the sitting area, however Susanne later explains that the management would like to

create an additional space that children could use for eating, playing and relaxing – a hybrid space between a dining place and a play space.



FIGURE 9: CASE STUDY INTERIOR SETTING

Susanne and her colleagues Martin, Zuzana and Tina arrive very shortly after we do, and we all have a quick briefing about how the session will take place. Susanne explains in more detail how their last session with these kids looked like, and what her aims of this session are going to be. She frames it as a feedback session, so that the designers can get further inputs from the children about the design proposal. They explain that the workshop they did a month before focused on creating spatial ‘atmospheres,’ basically the core concept of Susanne’s participatory approach: that special something that makes you feel a certain way in a place. The kids were asked to build their own ‘dreamworlds’ in a shoe box. By using various materials such as colourful papers, fabrics and foils, sponges, dry pasta, plastic flowers, old mobile phones, computer keyboards, wires, aluminium foil and many others, the children created their mini ‘shoebox dreamworld’ designs: the places where they would most like to be in (Figure 10).



FIGURE 10: 'SHOEBOX DREAMWORLDS'

The six children arrive with two adults – one of them is a mother of two of the children as well as an employee at the restaurant, and the other one is a teacher at the school the children go to. Everyone seems to know each other from the previous meeting.

This is my imagined narrative about how I imagine the children's spatial literacies before I even meet them on the day: "Petra is 10. She came here straight from school on a train with her teacher and some other pupils. She has her own understanding of space as she has been known to use it, her home, her school, the ways inbetween, the streets she uses every day, the city that is quite big and located nearby, she is not a passive visitor of all these places; she knows what they are there for, how she is supposed to behave in them and know what to expect others to behave within them. In a way, up to the day she comes to the workshop, she has learnt to 'read' space and has built up her understanding of places that surround her. How she 'reads' the places influences her choice to 'use' these places and now she is given a chance to use her understanding to help create or 'write' these spaces."

Introduction (5 min)

The session starts with a five minute introduction by Susanne, introducing how the activities will be structured into three workstations, mentioning Rosie, Maria and myself

as 'the ladies from Sheffield' who will have a 'theatre play with figurines representing each of us and they will ask you some questions'. She asks them who would like to work with whom and Elise (7) wants to work with Tim. But he does not want to be in a pair with her. He had already said he wants to work with the only other boy in the group, Markus (6). Elise does not seem pleased to not be able to work together with Tim, but she seems okay to be paired with Tim's sister who is her classmate.

During the introduction, the children are given the description of the three stations and what each station involves. It is a very brief introduction, and seems to be aimed mostly at organising the activities of the day. Susanne has the floor, and talks mostly addressed to the children, while the primary school teacher acts as her 'buddy', explaining some things that Susanne says, mostly to the smallest girl, and helps children decide who will work with whom. During Susanne's introduction, the teacher says to the youngest girl Katja: 'this is fun isn't it', to which Susanne responds with: 'yes this is very exciting also to us, I must say'. The teacher acts in a way like Susanne's helper, making the instructions relevant and exciting for the children. They both try to make the activities seem fun and exciting, they smile a lot and act enthusiastically.

Susanne divides the children into three groups, each doing their own activity at a specific 'station'. Children are accompanied by adults at all workshop 'stations' and they are guided from one 'station' to another, with instructions being repeated to them every time they switch a place. Following a structure may be necessary due to restricted time availability, and their packed agenda is reflected in the ways in which the children are organised to do their designs.

I do not get a chance to observe the two main stations as they happen, as I am busy running my own parallel

'station' interviewing children that are not involved in one of the other stations. I learn about the other two stations from the visual data collected by Rosie and Maria, and what the children tell me about it.

In the introduction, Susanne reminds the children of the former workshop that took place a month earlier, and tells them a bit about how they found their work from there useful. 'There were many interesting overlays' she says, 'for example many of you thought about what it is like to be somewhere high, and you had a tunnel, right?' as she points to one of the children. 'And then you had these entrances and mirrors and we tried to include as much as possible' she says to another child. In a way she involves them into her speech by gestures towards particular shoebox worlds and making eye contact with the kids whose works she is referring to, even though the children don't get to say anything during the introduction.

Exploring the design proposal in a form of a model and 3D visual representations (20 min)

Martin's 'workstation' begins with him reading the children's narratives they had written in the previous session. As he reads, they listen attentively and look into their shoebox worlds, which they had not seen since they had created them. The design proposal model is made so that parts can be taken apart, and allows children to explore it by pretending they are miniature human figurines (Figure 11). He shows them 3D renders and examines whether the children understood where these locations are in real life - in the room where they are located at that very moment.



FIGURE 11: EXPLORING THE DESIGN CONCEPT PROPOSAL – MODEL AND VISUALS (AFTER FIRST WORKSHOP)

Model building by using ‘modules’ and various materials (20 min)

At Susanne’s ‘workstation’ table there is a whole collection of white cardboard boxes of various shapes and sizes laid out on a table. Susanne later explains that the ‘modules’ were designed based on children’s narratives from the previous workshop, including a periscope module (Figure 12), a ‘spy-glass’ one-way mirror module (Figure 13), coloured windows covered by transparent foil, staircases and small boxes representing different sizes of rooms and spaces. The ‘modules’ are basically individual elements of a deconstructed design proposal model, and each one of them has a special feature or function. They are constructed at a larger scale than the model of the whole design, so the key features can be explored individually and in more detail.



FIGURE 12: EXPLORING THE FUNCTION OF A PERISCOPE ‘MODULE’

Susanne puts much effort into showing and demonstrating to the children the aspects of individual module features. She lets them experience the features on their own - for example by looking through little 'spy-glass' mirrors on the modules, that allow you to see who is on the other side, without them being able to see you (Figure 13). She lets them experience and explore the size of different objects representing spaces, through showing little human figures of different ages, which they can put into their model, to get an idea of scale.



FIGURE 13: EXPLORING THE FUNCTION OF A 'SPY-GLASS' MODULE

Susanne is accompanied by her assistants (Zuzana and Tina) her workstation, first showing the children how the individual modular elements work on their own, and lets children test the functionality on their own. Many rooms have smaller and larger openings representing windows, and Susanne makes sure they all understood how elements function before they start building their own versions of their ideal spaces. This part is clearly important to Susanne, who, after a child starts building before she finishes her introductions, at some point says: 'Let's look at all pieces first, and then we can start putting them together.'

On an adjacent table there are some model building materials such as little mirrors, human figurines, sponges, and many colourful transparent foils, which Susanne uses to

show different types of reflections and coloured lights that can be used as part of atmosphere. I see some children completely mesmerised by the materiality of elements, observing their reflections in mirrors, looking through colourful foils, or squeezing and patting soft objects such as foamy sponges (Figure 14). Susanne later reflects that that is probably due to young age, and I observe that the two youngest children indeed pay most of their attention on how things feel, reflect and fit together with other elements.



FIGURE 14: MODEL BUILDING MATERIALS AND HUMAN FIGURINES

When the children work side-by-side, I can see they often take on from each other's work, testing each other's ideas and working on them further. Frequently, the building activity slides into acting and pretend play, as the children start using the little spaces they build with the modules, and start telling stories what they would do there and how they would use them. I am impressed at some points how the children and designers are very quick at finding connections between the models and the possible imagined design spaces the models are representing. They seem to be very open to seeing things in multiple ways at the same time. A sponge can represent a soft landing spot but at the next moment, it transforms into a sandpit, and they tell a story of how they can jump into the sandbox from the top of the stairs on the adjacent module. And the whole

construction transforms into a private mansion. 'So now this is a mansion?' Susanne asks with slight amusement in her tone. The girls matter-of-factly confirm that this is just the way it is and keep working on the curtains that are also there for swinging and sliding down from higher floors to land in the sandpit on the ground floor.

I enjoy observing how the children make instant leaps in their thinking, and the designer following by linking seemingly unrelated ideas and subjects.

Possibilities are explored by testing the qualities of used materials - the qualities dictate the shape and also use of the little spaces children created with provided modules. Susanne frequently asks the children about their designs: 'what do we have here then?', 'where do you come in, here?', 'why did you put that there?', or 'why would you like this piece there?'. Children respond by describing the reasons behind why they designed the space in the way they did. Mostly the reasons are some activities that they can do there ('because it's cuddly', 'because you can jump down', 'you can see out, but nobody can see you in'). When describing the activities, the children act as if the created mini places were real, and they use their fingers or mini human figurines to represent the movement of their bodies. They 'walk' up and down the stairs with their fingers or use the provided figurines to place themselves in an imaginary space they are creating.

When the structures are built, Susanne asks about children's favourite place in the design. She asks, for example: 'where would you most like to be and why?' and 'where is your favourite place and why there?'. The children again respond by pointing at their favourite spot in the model, or use a human figurine to place it in the appropriate location.

Naming the creations, or ‘worlds’

After children are done with model building, they are asked to name their structure. Susanne keeps encouraging them to come up with a unique name, apparently to avoid something usual, such as ‘playworld’. Susanne writes down children’s final names of their creations: the ‘Colourful world’ (‘die bunte Welt’, Figure 15 left), the ‘secretly-seeing-through’ (‘Geheimdurchsehen’, Figure 15 middle), and ‘the house of colourful fantasy’ (‘buntes Phantasiehaus’, Figure 15 right).



FIGURE 15: 'COLOURFUL WORLD', 'SECRETLY-SEEING-THROUGH WORLD', AND 'THE HOUSE OF COLOURFUL FANTASY'

Susanne makes notes in her notebook as they are building, and asks them why they built something, and where they would most like to be in the structure they had built. She also takes pictures of the structure and the process, and so does her assistant Tina, who moves around through several stations and takes photos.

My absolute favourite is a little anecdote that shows what happens, when Susanne leaves the table and the two boys keep building the little ‘world’ on their own. ‘Em... Timon... will we call this the..’ says Markus. ‘Poop world... crap world... Arseholeworld’ immediately responds Timon, laughing. ‘No not poop world’ he then decides. ‘No... poop-arsehole-world!’. At that point they

both look at the camera realising that Rosie was there recording the whole thing, and they are quiet for a moment. They mumble quietly to each other and wait for her reaction. Since she keeps recording like nothing had happened, Markus concludes quietly 'tika-poop-world is the name of mine...'. I really enjoy little bits of data like that, although I don't know yet what to do with them and where to position them in my analysis, I feel they are an important part of showing children's literacies as they unravel when the designers aren't there.

6.3 Ljubljana: ‘Re-imagining the school grounds’

Landscape archi:	Paz!park (Urška Kranjc, Maša Šorn)
Architecture:	Arhitekturni biro Andreja Štrukelj
Design project:	Primary school playground and open space regeneration
Location:	Ljubljana, Slovenia
Date:	May 2014
Duration:	Four sessions, 90 minutes each
Participants:	11 children (ages 7-10 years)
Design stage:	School open space and playground evaluation, designing new proposed ideas
Aim:	Using video medium to evaluate space and propose new ideas

6.3.1 Autoethnography: experiencing literacies and communication in Ljubljana case study

‘Oh yes that would be fantastic, I will call the head of school and see what he thinks!’ my good friend Urška says enthusiastically and her big smile brightens up the Skype screen. We go back a long way with Urška. She was a couple of years ahead of me when we were studying for our degrees of landscape architecture in Ljubljana. Landscape architecture department hosted about 30 undergraduate students per year, so it was not uncommon to make friends with students a couple of years ahead or behind the year one was in. our first project together was back in 2004 – with another colleague we came up with this idea of a street poster exhibition showing short stories, told through the medium of photo-comics designed to engage with the passers-by. Every story pointed out one or two things that we found

were problematic in public urban open spaces, and hoped they would raise awareness about how cities are used, and inspire people to stop and think critically about urban space use for a moment. It was a successful exhibition, which then moved to two more sites and inspired more related work later. We even founded an informal group called Paz!Park, or ParkAttent!on in English, which gradually grew larger and is now formalised as a not-for-profit organisation, involved in many projects involving participation, open space design, and raising awareness of spatial users (see www.pazipark.si).

'Are you sure we could pull this off? After all, it is March already.' I say slowly, knowing this idea comes at very short notice. It would be ideal to be able to do this before children break off for school summer holiday, not leaving more than a month to prepare everything from scratch.

'Yes, don't worry about that,' she responds to my concern. 'I am sure we can sort it all out. Andreja and I have had this idea for a while now; we were just waiting for the right time to do it.' Andreja is an architect, and also a mother at the school where Urška's children go to. She designed the school's playground and would love to get some feedback on how it is used and how it could be improved. The two of them already worked together on a participative nursery design project together, a very praised and successful project they did a couple of years prior to now.

'And now you mention you are looking to do a live design case study for your research, I think it's just the perfect timing' she says reassuringly, and I feel more confident. And extremely grateful. Without them, none of this would have been possible.

Not a week goes by before I hear back from her: 'I have spoken with Andreja and she is just melting with joy

and enthusiasm. I mentioned it to Ida as well. She seems excited as well, although I have not had the chance to tell her about it in more detail yet' (personal email correspondence, 18.3.2014). Ida is the film director that is interested in working with children through the medium of videos, although later on her husband Martin, also a film director, will take over running the workshops.



FIGURE 16: CASE STUDY SETTING: SCHOOL GROUNDS

This particular primary school is located in Ljubljana, the capital of the Republic of Slovenia. It is one of the longest running schools in the city, having celebrated its 100th anniversary of operation near the time when this thesis is being written. The building itself has four floors, a large main library and two supporting smaller book collections, two sports halls and a large canteen. Approximately 300 pupils go there, aged between six and fifteen, which is the age range for compulsory primary school attendance in Slovene education system. Talking to my friends who are both mothers at the school, as well as having a quick look at the school's website, this looks as though it is quite active in community engagement, and parents are often involved in school activities. One of the teachers that helps us set up the workshops is a published author of children's stories, which encourage pupils to learn from everyday experiences in an engaging way. When I talk to Urška, she mentions how many other teachers at school value school outdoor space as a learning environment,

and use it for extending their classroom activities out into the open.

'The head of school's totally up for it as well, he loves the idea and wants to go ahead with it before summer holidays. He will get the kids organised and get the dates in - probably in the second half of May. How cool is that?' I am beyond thrilled when I read her response (personal email correspondence, 25.3.2014).

'Whippeeee uauauuu I am just shaking with excitement' I reply immediately, in a pure moment of joy that I will get to work with Urška again, and spend a month in my home country. The moment of exhilaration is however immediately followed by a big bag of worries as it hits me that we are now stepping into the zone of so many unknowns and with less than a month to pull it all through. And I still cannot shake off the feeling that I am pulling all these people into something none of us has ever done before just so I can have the experience of talking to kids.

Enthusiasm keeps spreading through: 'This sounds excellent, I would suggest having these workshops on Tuesdays at 4.30, when there are not many other children left in school. And this way I get to see you in action as well, I am so curious to see how it goes' says an amazing and very engaging teacher in an email to Urška (personal email correspondence, 26.3.2014).

I feel like the following weeks just fly by, and workshop design develops gradually, with smooth communication and support of the teachers and the school headmaster.

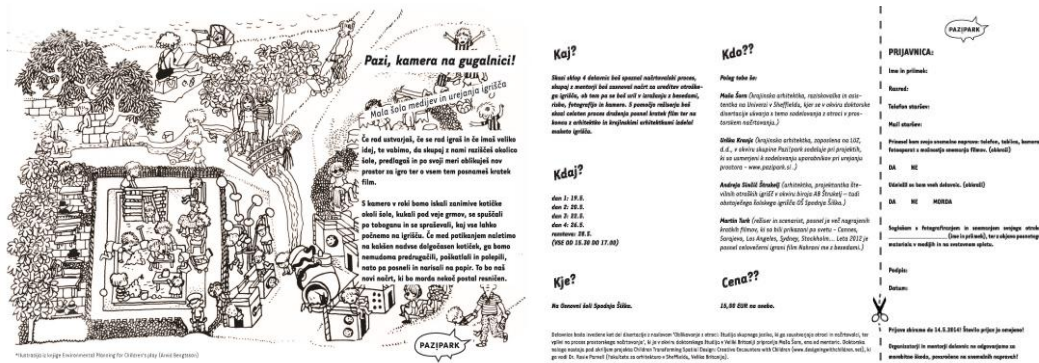


FIGURE 17: INFORMATION LEAFLET AND CONSENT FORM

Urška designs the information leaflet (Figure 17) which at the same time works as the application and consent form, which is given to interested students. In one of her emails, a teacher says: 'Our head of school finds the leaflet very likeable ('cute'!!), playful, attractive :-)! And indeed it is very cute - yesterday I spoke to some of my pupils and they were so excited to do the workshops - they are already starting to come up with ideas :-)! Sincerely, I am so looking forward to the workshops!' (personal email correspondence, 9.5.2014)

No way would I have ever been able to organise a series of co-design workshops with primary school children in Slovenia while I am based in Sheffield, and provide the high level of expertise and experience from design practice that Urška and Andreja possess. They did a participatory nursery garden design in 2011. They engaged the parents, children and staff from a nursery, to design and build a new garden and playspace, as the children envisaged it. Andreja is the author of the existing primary school playground. Her motivation of involvement is particularly aimed at seeing how her design was used in practice, ideally recording a short film about it, so she could learn if there are any alternations to the design needed. All three of us share the belief that children play anywhere and everywhere, so the importance of all open spaces around the school is emphasised from the beginning. A short walk away from the

school there is a large urban park, however the pupils are not allowed to go there independently, as there is a busy road separating the school from the park. With the absence of local and pocket parks in the area, the school open spaces are of vital importance for school's curriculum and after-school activities.

I am at the same time excited, yet also very anxious that I am not experienced enough, both in working with children as well as plunging back into a design project after years of working in regional planning and now doing research for my doctoral thesis. But I really want to experience conversations with children from first hand as part of my research fieldwork and therefore produce invaluable data for the thesis. I shake off the negative feelings and get on with it. I put all my efforts into making this happen.

'The application forms are pouring in and they all signed the consents forms fully!' says one of the teachers, after having done the first selection process of interested children. At the start, we estimate that our capacity would be somewhere between 10 and 15 children, so after receiving 13 application forms and having 2 no-shows we ended up with an ideal number of 11 participants. Everyone is happy to sign the informed consent section which was a big relief for me and my thesis from an ethical point of view. I did not realise then that a signature and an ok from the university's ethics committee was just the first small step in so many when I go through considerations and reconsiderations in my head about how to write about all these people ethically. I go through many written and rewritten drafts before I find the right balance and decide in the end to protect all involved by not naming the school, the children and even my colleagues. I still to the day when I write this am not sure whether that is the right path to follow, will some of the essence of this story be lost with

the true identities of all involved? Yet I decide that my experience of literacies and talking to children is after all my main interest and focus, so I decide to leave it where it is now.

I find the structure of design activities grows quite organically, while we exchange emails and skype whenever we can. We think about how best to incorporate video recordings into the design process, and how to deal with possible challenges like the children using cameras – will they know what they are doing with them, will they use them to record other things, will they focus on what we would like them to think about, do we let them run free to explore or stick around closely to offer help? We think of many scenarios that might happen and keep modifying our plans. During this time I reflect quite a lot on why our flexible way of planning goes so smoothly. I wonder if it has to do with the fact that the project is self-initiated, zero-budget and none of this had been conditioned by any investors or clients with clear targets of collaboration on our backs. This has obvious downsides, as from the very beginning it is not certain whether our proposed designs will ever find enough funding to be realised, yet at the same time it created a flexible space to explore our interests in using a medium for talking about designing spaces, and it definitely left me with enough manoeuvring space to explore and reflect on my research questions within the process.

The activities are designed quite flexibly, allowing for participants' engagement and reactions. Key methods of using video recorders, drawing/collage materials, and 1:1 scale models are distributed throughout the given dates to help develop children's design ideas in conversations with designers.

Let's make some videos! (90 min)

I was really really nervous, all weekend, and in the morning of the first workshop, mostly because the first meeting I had with the other collaborators, the architect and the two teachers as well as the, what's the word, the film director Martin, all these people hadn't met each other before and I met them the first time on the first day after I got back to Slovenia and I was just full of emotions of coming back home, and meeting my parents and my friends, and just getting back into a different routine and not exactly knowing how it will turn out by then, I didn't really know how many applications we had, how many children, but it all turned out to be okay.

From my video diary, May 20th 2014

The primary school hallway is empty as I wait to meet my colleagues to set up the first day of workshops. It feels nice and cool on this hot day in late May, and there is something in the coolness of the air and the distant echoes bouncing off stone floor and high ceilings that seems just so familiar. It takes me right back to my years in the primary school not too far from this one and I am experiencing mixed feelings. I never felt very comfortable when I was at school and sitting here makes me grateful that I do not have to be a pupil anymore. I wonder how this will affect my work here, as I will have to construct a new attitude towards a school environment, and position myself into a role that is neither a pupil or a teacher. I wonder how we will come across to the children. We are in no way one of them, and yet we are not the teachers either – although we are leading a series of workshops with a possible educational undertone.

When I get up to greet my colleagues and the teachers, all these thoughts disappear and all that is left is: we

need to make this right. The participants have a good time taking part. A certain anxiety creeps in: will I do a good job to make the children feel engaged and enjoy these activities? We all gather around a big table in a shaded corner of the playground when all the kids arrive, buzzing with anticipation.

'Erm hiii everyone...' I hear my voice coming from my mouth, but I can't recognise myself in it. It's like I am listening to myself on a recording, my voice sounds foreign and forced, and the high pitch makes me sound fake. I am standing in front of 11 pairs of eyes looking at me with anticipation, and 4 more pairs of eyes and ears that belong to my colleagues, who are equally as curious to hear how I will introduce and open the first ever workshop. I wish I had prepared a speech more. I just want everyone to get on with it already.

'Eeee, uhm what we're doing today, we are looking at the space around your school which needs a new design, a new redevelopment. We will learn together how to make little short films, that's why we have here Martin Turk, a film director who will guide us how to do a film! And the theme is, I think you all know about this by now, the theme is How to change the school playground!' I find my voice freakishly enthusiastic, over-emphasising some words and pausing after them, making eye contact and smiling like a clown. I feel like I am entertaining and acting at the same time, forgetting everything I have to get across to start working. I did not plan to talk like this, what is happening, why is this grin on my face that I am not feeling, and nobody is joining in? Is it because I am talking to children? Could I possibly be that shallow? I am doing the same thing I used to hate when adults talked to me, I still remember that annoying patronising undertone that I still sometimes get from some people in certain situations when I find myself to

be the youngest or less qualified or inferior due to gender, nationality or knowledge. Why am I doing this?

'We will give you these digital cameras,' I say as I spread the 5 blue cameras out on the table, 'you can have one per group. Oh yes you will have to make groups of 3 and 2' I say as I struggle to divide 11 by 2 and 3. And the instruction is only one: record videos of places and activities that you like and dislike in your school playground and open spaces. Talk to each other, make interviews, record each other doing the activities in your most and least favourite places,' I consciously adult-up my further instructions and making stronger eye contact to Urška and Martin to come in with their side of instructions. This took about two minutes and I am already exhausted.

'When you are filming around the playground, you can interview each other about what you like and what you don't like in the playground, tell each other the reasons for it, show it in action if you'd like. We will be nearby so if you have any questions at all just come chat to us. We will not follow you around, you are free to go anywhere in the playground on your own, but we will be close by if you want to chat or ask any questions' says Urška in a calm composed voice, not showing any of my over-smiley child talk that I performed in a high pitch just minutes before.

As Urška talks to the kids, I remember all the things I forgot to mention, like, to make sure they know what areas we are talking about, do they know what design means, do they understand what we are here to do, should I tell them what aspects of likes and dislikes in space they should focus on? What is their understanding of space anyways, do they all even use the open spaces and the playground? And the video medium, will they be able to read space in front of a running camera? What are they ideas of good quality spaces and how do they use the ones already there? My head is buzzing and my smile muscles are beginning to hurt. I am

aware that I am not being myself, I feel almost like I am performing. I crave for a chance to be authentic and wait for everyone to get on with the task.

I feel like I have to wrap up the introduction somehow and I come up with this: 'and next time we will see together what and where you want to have changed or newly built in your playground. So we will be focusing more on what to do with the space and discuss the new spatial design.' Too specific? Too adulty? Too generalised? I have no idea, but they seem to grab the cameras and run along without any hesitation.



FIGURE 18: USING VIDEO MEDIUM FOR EXPRESSING SPATIAL PREFERENCES

As the children run around, talking and screaming into cameras and at each other with raised voices, they don't show any signs of technical difficulties or not knowing what to say (Figure 18). None of them seeks help from us and they seem like they are not getting tired of doing this at all. I observe them establish a dialogue between themselves and the camera, which serves as a structured medium with its own logic, rules and representation of reality. They quite naturally use this medium to express how they read space, and how they evaluate it, showing, telling and acting their preferences. I think back of the establishing trust issues that other designers have talked about in interviews, and I think that it is amazing how at ease most children seem to be, thanks to their teacher being there, and the fact that both Urška and Andreja are also mothers at the school and

children seem to react to that fact in a certain way. I feel like an observer on this sunny warm day, filled with busy screams and running around, I feel like the centre stage is taken over by children's agency to play, film, tell, show, enact, move, jump, dance and touch the space around their school.

If I do first reflection about today, I would say, I guess the children they, the further away they were from us, the adults, the more they went into their fantasy world, when they were making the videos, and ideas about what can be done at their own school, which was great and for analysing what they thought with those crazy fantasy ideas we can let them into our spatial design proposals by asking them further of how these places make them feel, and what exactly from a rocket shuttle station they would like to see there. I'm sure they don't want NASA to go there and build an actual rocket station, they just like the colours of it and the feel they are part of something bigger, and that there's something silver there and that you can go inside and that it's just really cool. So things like that is what I understand under translations into space... into spatial design from their imagination. I guess that links really well with what Baupiloten are doing and I'm sure I must have been influenced by them by seeing their workshops and reading about them but I do believe that there is a translation factor between what the children think in their fantasy of space and what the designer can actually do. And in this case the video is not the translation link, but it's a good medium of them describing, showing using spaces as they are, without trying to adapt them to what they think we want.

From my video diary, May 20th 2014

Reading and writing space according to preferences (90 min)

Oh dear lord from the very beginning we encounter difficulties. The children seem to get a little bit bored with the technique; they'd already mastered the use of the cameras, it seems to be no longer as exciting as the first day, and the majority of kids start fooling around, paying a lot less attention to what I am trying to say to them, even in the first, instructive bit. My worst nightmare, happening in front of me. I think it's either Urška or Andreja that come up with the idea of mixing the groups up because some problems started occurring - especially in the groups of three, where two of the children were friends from school, from the same class, and the third one seems just an unwanted extra. Not prepared, equipped or in any slightest possible way in possession of the faintest idea how to deal with any discipline issues, I thank my lucky stars that all three people I am doing this together with, are parents, and seem to treat the incidents with a calm 'business as usual' attitude. An hour and a half full-of-out-of-control-screaming-running-around later, I decide that most of the participants are still quite keen to make films and think about their space and how they want to use it, and we end up having some good conversations about space despite the initial hiccups. They take us round and show and tell why some places are good and some places are bad and what they would want to do there instead. We use bright coloured masking tapes for navigating between the liked and disliked spaces, and how they could be envisaged in a different way.

Intended as a natural continuation of the workshop two days ago, this session is growing into something a bit more critical, yet still includes many instances of how children read and write space to us. At some point, Martin makes a little hands-on session, encouraging the children to go a bit deeper into thinking about how to make videos, and briefs them on how to construct scenes, watch the

composition and pay attention to sound recording. We give the kids a bit more focus this time, asking them to write, or better yet, 'overwrite' spaces in their school surroundings, with what they would like to see there instead of the places they don't like. What I observe when I engage with some of those videos is that they are adopting this, in my mind, almost a documentary style of capturing critical responses rather than free improvisation and exploration of space as in the first stage. And video recordings look like little documentaries when I watch them afterwards.

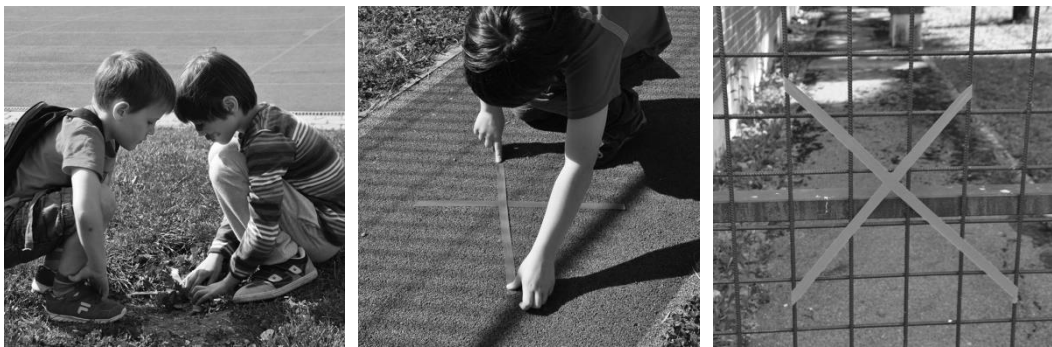


FIGURE 19: EXPRESSING PREFERENCES IN SPACE

As we move from one space to another, I get an impression that children get ideas when we are physically located and interacting with the places where we are at the moment (Figure 19). They read the spaces fully based on their former experiences and on what they already knew they could do in the playground. So this method didn't exactly open up the doors to more imaginative design solutions, however the youngest children show a little bit more inclination towards slightly crazy things that could be there in their playground, so it was actually quite joyful to try and imagine those ideas for ourselves.

Later on after the workshop we sit down with Urška and Andreja, and we discuss keeping the design proposal very realistic, so the headmaster would actually have more chances of funding the project. Because they are both very experienced in practice, they translate children's ideas and

'writings' of new spaces very much in the context of what can realistically be done, and what is feasible. It takes some getting back to Earth for me after all the jazzy underground slides and automatic hedge-doors discussions with my group, to realise that I was only focusing on writing space in the imaginary world, taking the space further away from reality than the context could take.

Hi, it's really late and I'm very tired so I will make this really short. So tomorrow I have to plan Thursday's workshop which will be very much spatially based so we might make collages while we talk about the videos and analysing what they'd filmed and while the film director helps them make the one minute clips from all the footage they'd made and those videos will actually represent their work, which will then be questioned and discussed and put into the spatial plan. Goodnight.

From my video diary, May 20th 2014

Using collages and drawings for writing space (90 min)

'The first week of the two-week workshop life has passed, and the most important part is now in front of me. The first three workshops focussed on the children expressing their opinions about the school surroundings, and their ideas and wishes of what should be done in future and where. They used video media to express themselves, filming the space as well as themselves using it, and talked about it in an 'interview' style between each other. Video medium helped them think about the topic in small groups and individually, and allowed us to ask questions throughout the workshop.'

Blog entry, Maša Šorn

Choosing a site with them does not really give the results we are all expecting, because we are all expecting them to do something in the leftover area that we all had our minds set to do but keeping this workshop totally children-based, we have to respect that and use another site, which will be very challenging because they all had different sites all around and they came up with completely different ideas. A little democratic vote of what area of school surroundings to use as the location of a newly designed playstructure fails pretty badly, because the children keep their individual focuses on the areas they use most often, and they all seem to have their own favourite spots. Our wishful thinking to use the little back area behind the school for a new redevelopment site, goes by unfulfilled. It's a place where nobody really spends any time just because it's not really designed to do anything. What an ideal place to redevelop in the mind of three designers. And yet the children focus on the places they use every day, which makes perfect sense once you think from the user's point of view.

I'm so tired I don't even know where to begin. Today was the third workshop which was the hardest so far, it's become really really difficult to find the right balance between the fantasy ideas of children and the realistic expectations that we are supposed to meet, and deliberately I encouraged the fantasy to stay as fantastic as possible and both designers respected that and pulled back a bit. But I don't know where's the right combination or when and how to start combining them. So it will be really difficult to do something for next Monday, because we will be building a 1:1 model, and at the moment, quite frankly, we don't have a clue about what location to use for it.

From my video diary, May 22nd 2014:

The third workshop takes place in a classroom and the children are engaged in making spatial presentations of their ideas. Using existing plans of the area to help place some of the discussed interventions and opinions, children start translating the embodied, sensual experiences of space into drawings and collages in collaboration with designers (Figure 20). We circulate between children, which worked on their plans either individually or in groups, using plans, elevations or reference material from magazines to create the spaces they had imagined.



FIGURE 20: MAKING DRAWINGS AND COLLAGES

There is not a lot of exchanging ideas between the children and adults, not at least as far as I can see and hear. We seem to be here merely as their encouragers or facilitators. Constantly probing them about ideas, but not really making anything of it. I have absolutely no time to make any notes, it is just impossible.

My mind is all into what the children are doing and how they are doing it and just assisting them and so I don't know. As I watch them I don't have a clue what we're going to do at the next session to be quite honest. The plan was to select a location and decide on what to do on Monday with the 1:1 model and at the moment it seems we have ten different children with ten different ideas and possibly at least two or three different locations. Which is not doable in an hour and a half on Monday. At all. So just being preoccupied with the plan and how to do things has so far

completely stops me from having any kind of creative exchange of ideas at all. My biggest worries are what can actually be done and having the architect who designed the existing playground, which functions really well, but having the children criticise it and comment on how it could be made better, just because they know it so well, they think about it every day and now somebody asks them what would you change then of course they will comment on the thing they use the most, which is the playground. So I don't know how that makes her feel, because she is the designer and she knows it's very intensively used, that playground, and having all this criticism now - I don't know if that's constructive for her to hear or not, I mean it can be taken as a criticism or something good to have somebody use it so well that they know how to make it better.

I would have to say that the children's verbal expression is still the strongest. Even in the case of the youngest boy called Lan, who is quite shy until he is asked something directly - that's when he becomes more powerful. But Lan seems to be very scarce with words, he is not very strong verbally towards other boys, especially the ones in his group. At some point they try to get rid of him, so he is very shy and reserved. However he describes his ideas on video as well as describing them to me as he is drawing, very elaborately and even if he does not know how to say things exactly, I still know exactly what he is talking about, so the drawing is actually not the strongest communication link at all. He does not relate to the visual representations in magazines and I suspect the older boys who at some point decide that yes they want to include these photo images from magazines, I think they just like the images just because they look cool. There is this one image with wine glasses with really large things inside like people, cars, and this huge beautiful beach behind it and he just really likes that image. He does not link it very well

with his otherwise beautiful idea of sort of entering his building through one of the ponds, sort of going underground under the building and then having a slide into another world, and then these glasses he doesn't really think spatially about where they are going to go, he just really likes it when he sees it.

So I think the collages were there more for us and our idea that they would love to work on collages. So the bottom line is that they really just explained it by words, the best, even the youngest. Even when they were filming the videos, they focused on talking. We tried to encourage them to show the activities they would like to do at places, and they did, but mostly just for the sake of the quality of the video. And the way they were running with the video cameras was more for the effect of the film rather than explaining what they wanted. So just based on these three workshops, I think that the spoken word and verbal communication was in fact the most colourful one in the end.

In terms of languages, it seems to me that verbal communication is the most prevailing one. I do believe that triggering the momentum of this communication is key. In this case the trigger is making videos and having this clear question to focus on. In a sense the video medium is in a sense a time-delayed window into the children's worlds, and it creates a very good break-the-ice moment when working with unfamiliar people. The video medium seems a much more effective medium for recording design ideas than any kind of drawing or collages that I try to use to summarise those videos. It is important to break the ice between us. Having the children really understand my questions at the start of the conversation, I definitely find to be of key importance, and it guides everything else I talked with them about later on.

I must admit that the video medium works in a slightly random fashion, the recordings tend to be quite messy, but it seems that what the children later on come up with in the drawing and collage exercise, is greatly influenced by what they discover in the video workshops earlier. So all of it is really just a dialogue, me asking a question and them exploring it. And the question is: would they have focused on the same question as much as they did if they didn't have the camera? Because the camera gives the children a reason to focus on something, and hence becomes a tool for exploration and critical reflection.

So how this dialogue influenced the design process... I think that this dialogue WAS the design process, it definitely initiated the first thoughts about space, and it influenced my design process from the other two designers, who have already thoroughly thought about space. I am the newcomer and they.. one of them is a mother of a boy that goes to that school and the other one designed it, so it would be interesting to hear how they saw it. So this dialogue, had I been only the designer, might have been a lot different – if I could only focus on the spatial design and not the facilitation, or the administration, and keeping the children together. But that is never the case, you never have everything served to you.

From my video diary, May 24th 2014:

I feel large pressure that constrains my thinking about design, coming from the (not even expressed but imagined by me) expectations from the headmaster. Not just the expectations, but the realistic opportunities of actually funding this design. Especially if the children's ideas are as dispersed as they are. And we just kept them dispersed; we did not want to guide them into just one solution. Even if all of us really wanted it. So at the

moment we are just keeping it very straightforward how children wanted it. Meaning their locations, their ideas, and just showing it as it is. Well the idea was to put it in a plan and give it to the headmaster. And that should be done basically before the fourth workshop, which is building the model of the proposal. But if we did the proposal now, it would be just a realistic idea of what can actually be done, and there's no time to do that before Monday, and the other two designers don't have time to meet up before Monday, they just want to draw everything after we do the model and even then there won't be enough time. So this realistic factor kicked in quite hard at this point and even if.. well the first realistic factor that is. Another realistic factor will kick in when we try to build the model and it doesn't really work as their dream fantasy plans, because in reality things have to stick together, they can't be just in these clouds somewhere. But we don't really have completely unrealistic ideas. So we might get away with it.

'So now in retrospect, the course of the workshops took its own way, I allowed it to grow organically rather than forcing expectations onto all involved (both design expectations as well as workshop organiser and coordinator of the course). The plan for the second week activities was for children's experiences and ideas to be translated into actual spatial language, drawings, plans and visual representations, before the 1:1 model building activity, where they could test their translated ideas in actual space in real life scale. The shift from videos to plans was not smooth. There was less interaction in the drawing and models task, as planned/expected/hoped for.'

Blog entry, Maša Šorn

**Group decision-making: spatializing design ideas (30 min),
measuring and building 1:1 models of designs (60 min)**

This stage was intended to last a lot longer than it did, finding a consensus between users to decide where a new design or redevelopment will take place and what it will be. There are many different voices and wishes, and a group discussion over a plan of the area brought the former, sometimes fantastical conversations, back to reality. Actual constraints of building reality entered the conversation, and space no longer was the all-allowing, ever-extending, possibility-offering interlocutor; it became a scarce resource, shared and limited, bounded by the laws of the physical and financial world.



FIGURE 21: NEGOTIATING SPACE

At the beginning of the session we all decide together in which parts of the plan there should be new interventions (Figure 21). We all stand around this one 1:100 masterplan of the school and surroundings and my friend Urška draws all interventions on it as the children say them out loud (at some point this saying turns into screaming, as they all try to speak at the same time). There is one particular place where they just cannot come to a consensus about what they wanted to do there, so Urška just says 'you know what, if you can't decide amongst you what to do there, then you're not going to do anything there'. To my big surprise, they all respect that, and don't argue. I admire how she leads them to go through this democratic process, which I would

never be capable of doing. I just freeze as soon as they start arguing and talking at the same time, and I just want to hide away. But I find it so inspiring how she really makes them understand the reasons behind her choices, she says for example: 'look we only have one space, there are nine of you, you have to come to a common solution', and they respected that.



FIGURE 22: CRAFTING 1:1 SCALE MODELS OUT OF CARDBOARD TUBES

In the end we had this large scale masterplan of the whole site, and these individual, punctual interventions, which we grouped in two groups of 3, 4 and 5 kids and we went on site and explored the scale, and measuring, and how much a certain measure means in space and what does it mean on plan. So after playing a little bit around with measuring on site we came back to the classroom and started to build the 1:1 models out of cardboard tubes (Figure 22), the ones that hold paper rolls used in large printing units, and colourful duct tapes. So we built this large swing, and some see-saw-like play equipment, and they were very inventive with the building materials. And I think the way we were trying to solve it and build it kind of shaped their ideas of what it should look like. I found that worked really well, and they were all very engaged and time passed so quickly.

'This is a crucial point of translating those ideas into reality, and I have found there are multiple versions of this reality. There is the financial reality which depends on the headmaster, there is the reality of what can actually be built in this space, the reality of safety standards of children's play equipment, and the reality of time we as designers have to dedicate to this project, which is entirely voluntary. Tomorrow we will play with their ideas building a 1:1 model on site, and test their ideas against some of these realities, changing their designs and inputting our suggestions.'



FIGURE 23: PLACING 1:1 SCALE MODELS INTO THE SCHOOL GROUNDS

The measuring stage was then immediately translated into materials, as children and designers constructed their ideas and positioned them in space (Figure 23). This stage was originally intended to enter conversations at an earlier time, to allow more discussion and changes to proposals after they had been placed in actual space. However even at the very last stage in the design process, it provided a space for co-construction of new designs, and a translation medium between children's and designers' understanding of each other's imagined spaces.

All in all, the fourth workshop was just for me, it was just, you know, we've done something here, it's good. We've got really nice photos of the models, we've got a really nice video, an edited video which the children edited themselves, and we've got something there which is really good. And I feel

confident about it finally, because in the beginning there was just a lot of frustration and a lot of messiness, just not knowing where things are going, and is this even valid, and am I reflecting on something that's not even relevant to anything. But now I am.. seeing the enthusiasm in the two other designers really helps me get positive about it. So it will be a lot of work tomorrow still, but it's looking good. Goodnight.

From my video diary, May 20th 2014

6.4 London: ‘Imagining a new play structure in the school yard’

Architecture:	erectarchitecture (Barbara Kaucky)
Design project:	Play structure in a primary school yard
Location:	London, UK
Date:	September 2014
Duration:	One session, 120 minutes
Participants:	13 children (ages 6-10 years)
Design stage:	Phase one of design process
Aim:	<i>‘Imagining a new playstructure in the school yard’ (Kaucky, 2015)</i>

6.4.1 Project background

Locating the observed session within the overall design project

This final live case study takes place at the beginning of school year 2014/15. A local architecture firm is hired to design a new play structure in an existing school yard at a central London primary school, and I join the project at the stage where children of the school council, as the school representatives, are asked to get involved in the design process, by taking part in an approximately 90 minute design workshop which takes place at their school. As described by the main designer Barbara, this is an ‘intensive workshop on the design development for the phase one, which was this big climbing structure and then hopefully involve children during construction’ (Kaucky, 2015).

Barbara is a founder and a senior architect at erectarchitecture, a practice based in Hackney, London. They are commissioned in early 2014 to redevelop the school yard, and design a new play structure. The architects propose to the school

to involve children in the design process, something their practice has many experiences of.

We [erectarchitecture] are architects, we are practitioners, so we engage with children a lot through our work. We engage really with all age groups but a lot with children our work on community buildings, learning environment and sort of play environment. And this sort of a project gives us a chance to reflect on what we are doing.

(Kaucky, 2015)

The school council was selected to represent the rest of the school by taking part in the design workshop. Reflecting on her prior experience of doing participatory projects at schools, Barbara of erectarchitecture finds that it is *'quite common in a school that you would get the School Council'*, because *'it's like a democratic process essentially and they are the elected representatives of the rest of the school'* (Kaucky, 2014a). The client is a mixed gender community school in London, the UK. It had more than 400 children on the roll in 2014, with integrated nursery and provision for boys and girls aged from 3 up to 11 years. Children come from diverse ethnic communities and according to the core values statement, the school has a very strong ethos of 'Passion for Learning', 'Fairness', 'Quality', 'Readiness for the Future', 'Collaboration' and 'Creativity'.

'Children and adults agree this quote from Ofsted describes us very well: "This is a happy school where pupils from many different cultures and backgrounds work and play together in harmony. They are keen to work hard, and enjoy sharing and listening to each other's ideas".'

The 'About us' section of Primary School Website (Source hidden to allow anonymity)

Communication tools and intentions of the workshop

The structure of the workshops as well as communication and design methods is developed by erectarchitecture. The main communication medium at the workshop is *'doing and making and therefore expressing something where they slightly lose control'* (Kaucky, 2015). While Barbara acknowledges the importance of conversation in design, knowing from experience that some children are most comfortable at talking about their designs, she emphasises the importance of using a form of expression that extends beyond words. She explains why in her experience the *'doing'* is at the heart of their approach to collaborating with children:

'because they are in a medium that is not familiar to them and therefore they might show more than they necessarily think and then you have a starting point where they can talk about, or having fun materials that the kids are not familiar with, I think that is all really important but at the heart of it is the doing.'

(Kaucky, 2014a)

The doing and making is the intended basis for discussion, which is a specific elicitation method used by the designers. The architects collate children's ideas and come up with four design proposals which they present in a meeting with parents. Our research team visits the built structure in late November 2015, a year after the workshop, to see the playground in use.

'we are now going to write down everything they've said and there were a few big themes which also Alistair picked up on like the sort of complementing quieter spaces and nest space and hiding spaces and sort of more activity, climbing monkey puzzle nets and the observing was a big theme, like looking over the wall and climbing up and looking down and then the flags sort of above, they present a school identity and they are big themes that might not be always in a project but I think they also see [them] as the foundation of the successful playing environment so the kids are very aligned anyway with all of our thinking. And then we

would just indeed make a list and look at the spatial qualities they have created and just try and recreate those'

(Kaucky, 2015)

One of my key aims on the day is to figure out what the aims of this workshop are, in the eyes of the designers – not just how I perceive them to be. I expect them to be similar in any such participative design event, but for the needs of my research, I would like to explore what the designer really expects to achieve and get out of such an intensive workshop on the day. As Barbara describes it, the children are mainly there to '*contribute their ideas*' to the designs for a new play area in their existing school courtyard, and with some help, '*show them spatially*' (Kaucky, 2014a). These ideas feed into erectarchitecture's final design process, which is '*very similar to what the kids did today*', and is done later in their own office.

She describes their own role, the role of Sarah and herself, as 'facilitators, inspirers, helpers, support, praisers, builder uppers of self-confidence', while they want the children to be 'architects, designers, and they take that on' (Kaucky, 2014a). I find it important how she sees herself and the children, what roles does she envision themselves to play, because it shows what her intentions are for the day – and explicitly on that day, not the whole why she is doing design with children altogether – what she is trying to achieve with the workshop, what are her aspirations and how she plans them to feed into her oncoming design work. Understanding her intentions is something I try to observe on the day, but my own ideas about how child participation in design should look, get in the way. This helps me understand my role on the day as well: I will be an observer and recorder of activities, but my field notes will be heavily affected by my view as a designer.

My role in data production

The main corpus of data includes researcher field notes and sketches, interviews with children, interviews with the key designer Barbara immediately after the workshop, and another interview about a year later. This data is used for thick

description of what I observe to be happening, in combination with what the designer and the children later say about the event in semi structured interviews.

Revisiting the session as much as needed to further enrich the thick description is also made possible with the help of visual data. This includes researcher photos of the process, and audio-video recordings of the session, which are the main data source for Conversation Analysis. Two static cameras are positioned in corners of the room, and two mobile cameras, embedded in glasses worn by myself and another researcher Jo. We tell the children that we are wearing these 'spy glasses' which are recording what they are doing and what they are saying, however they seem to forget that as soon as the design workshop is underway.

6.4.2 Ethnography: observing literacies and communication in London case study

This is a very early morning, as Jo and I embark on a 6.30 train from Sheffield to London St Pancras, in order to be at the school at 9am, for a sharp 10am start of the workshops. We have no idea what to expect from the space and the school, on the train we are trying to imagine and discuss as many possible scenarios as possible. I am quite nervous with anticipation of the unknown as we arrive to the school more than an hour early. As we try to find a place where we could get some tea, we observe the school surroundings, and I imagine the children's everyday walk to school, the things they see, smell, play with, jump over, and experience in much more detail than anyone else living here, as they walk the same route every day. I try to immerse myself in the vibe of the area, which is very central in London, yet has a neighbourly feel to it. I also find it incredibly hard to find an open place which serves tea this time of the morning, and we walk quite far to find one.

In the end we have to run back to the school as time passes quickly. When we arrive at the school slightly out of breath, it is already buzzing with morning drop-offs, there is a very friendly and homely feel to the reception area.

The receptionist knows who we are, I feel like she assumes we are part of Barbara's architecture team. When Barbara and Sarah, the architects, arrive, and we greet them in a manner quite clearly revealing we had never met before, the receptionist must be surprised, but I don't notice it. I am impressed by the large schoolyard models that the architects brought along, and huge bags full of natural materials such as twigs, branches, herbs and sticks, assumingly for the model making activity. While Barbara

calmly talks us through the plans for the day, the head of school Alistair approaches us and greets us warmly. By then, all tension is gone and I am happy and looking forward to witnessing the design workshop we have all been waiting so long for.

Introductory presentation (15 min)

'I will explain you a little about where on the school playground we will build some sort of exciting play structure that you can design in a model form today and we will talk about what this play structure could be and then we will do it that's the plan for today'

Barbara Kaucky, 23.09.2014

The morning workshop with children starts with a 15 minute presentation in a room where the desks are pushed against the walls, allowing the centre space for children's seats arranged in a half-circle so to best face the screen, and to give the speaker, in this case architect Barbara, the centre stage. The head of school Oliver is also present in the room, and Jo and I stay in the background, silent, wearing our recording camera glasses and taking notes. Barbara's colleague Sarah is in the meantime arranging model building materials around the set tables, ready for the children in the arts and crafts workshop.

From the communicative point of view, this is the first recognisable section, with distinct character, which is distinctly different from the following stages. She begins with introducing herself, and her profession, and what the aims of the day were. It seems like a straightforward way to introduce a daily activity, but there are some details of how it is done that are looked at in more detail below.

It is key to my narrative that I make clear what my role within the activities, the people and the overall flow of events on the day is, situating myself within the whole event: from the point of view of it being a research case study, as well as it being a workshop as part of a design process. As the events start unfolding, I cannot help but feel a bit like an intruder, who has an insight into something quite intimate and personal, so this is why I try to be as least intrusive as possible, and smile excessively at anyone that looks at me, whether it is the children or the school staff. The way in which Barbara introduces us to the children is as 'the researchers from Sheffield', telling them we will be recording what they are doing, and taking notes. As she talks about us, the children observe us quietly and I feel very conscious that I already am somebody who is just looking at them and taking notes, I feel like a spy more than a part of the whole process. She also mentions that alongside herself, Sarah and Alistair, we would also be helping the children out with building models, which I know straight away we will not do in full extent in order to keep our distance and get best observations on the way. But this helps me understand the role in which Barbara positions us right at the very start, and we go along with it.

This introductory talk takes place in what I find a very well equipped room for a primary school, and I suspect the large display covering one of the walls might be interactive. This detail becomes a part of the story on the day, as Barbara interferes with what is shown on the screen at some point, not realising her touch will interact with the computer. It causes her to gasp and the children to laugh, creating a moment where children are faced with Barbara's specific skills and abilities, without it being planned. It is a piece of her introduction to herself that is out of her control, but on some level it is already forming the professional-lay dynamics amongst participants,

when Alistair the head of school informs her how to use the touch screen and they both laugh at the event. This little vignette in a way also acts in a way that brings some humour into the introduction, and allows Barbara to laugh at her own lack of technical skills.

She proceeds by presenting her planned activities for the day, and showing them the space they were hired to redevelop. She makes a very brief test to see if they understand which location they were working on, by showing them a google map view, and they go into a discussion about where one of the boys lives, where another one goes to play football and where the nearby park is located. The head of school joins in to this short discussion, and they both wrap up this introductory bit by inviting everyone to follow them into the next door arts and crafts room, where the co-designing work with children takes place.

She begins her presentation with a quick summary of the design brief which focuses more on what should be done on the day rather than focusing on the final output that the architects must produce at the end. The design brief is for redeveloping an area within the school yard, focusing on designing a new play structure. I have a pretty good idea where that particular area is, having had a quick look before we entered the building (Figure 24).



FIGURE 24: CASE STUDY SETTING: SCHOOL YARD
(PHOTOS COURTESY OF B.KAUCKY)

What I am interested in is, do the children understand where these areas that Barbara talks about are, and do they link actual locations to the model spaces that designers brought with them. I think Barbara has the same idea, as this question, or probing, is part of the presentation – making sure the children know where in space the representations on the models are taking place. This reminds me of a moment in my own project case study in Ljubljana, where Urška does a quick test of children's map reading abilities with the plan of their school, by asking them a couple of quick questions relating to the real space, and where it is on the map. After those few questions she says 'they are ready', and hands the table over to me. There is an instance of relating a model to real space in Cologne case study as well, when Martin rotates the dining space model by 180 degrees, so the girls can relate it to the room they are in – showing them the windows in real space, and then on the model, and a pillar in real space, and where it is on the model. He waits for the girls' confirmation that they understood where it all is in real space, and only then continues.

A large part of the introductory presentation consists of Barbara introducing and showing the children some visual examples of her previous work, beginning with Tumbling Bay playground in East London Olympic Park. Using this example, she outlines how a design process works: by beginning with a picture of a bare concrete carpark (figure 25 left), she says how it all starts with an idea, followed by sketches (figure 25 middle), a model, and finally building a playground, which looks like it does today and which many of the children had been to (figure 25 right).

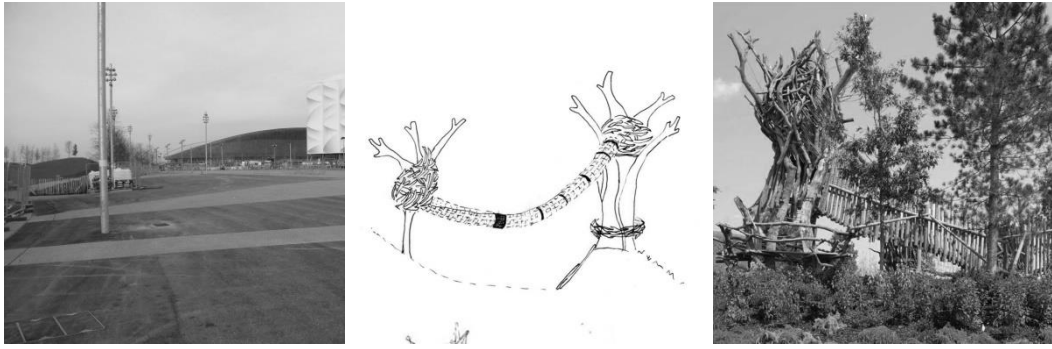


FIGURE 25: TIMBER LODGE AND TUMBLING BAY PLAYGROUND
(SLIDES COURTESY OF B.KAUCKY)

In this way she also introduces the stages of the workshop they are involved in on the day, and tells them that their 'brief is to use the theme: *Nature is taking over the school playground*' (Kaucky, 2014b). She wraps up by summarizing the activities and inviting the headmaster Alistair to organise the children into groups and lead them to the crafts room next door.

Designing the play structure (60 minutes)

'You can write it down and build a model of it, as now we will go into the other room, where we have lots of model building materials. And the task is that first, Alistair will split you into groups, and then you will all have a sheet of paper and then first you have like ten minutes to really think about it. Every group talk about your ideas and come up with what the architects call a concept, which is like a quick story to describe your ideas for this bit of the play area. And then we talk about it, all together, and then you can start trying to build it with all the model building materials we brought along.'

Barbara Kaucky, 23.09.2014

The children follow their head of school from the presentation room into the classroom next door, which is a crafts room - full of arts and design tools and equipment

(Figure 26). He divides the children into groups of two and three, and shows them where to sit. The children follow him quietly, in an orderly line, not talking to each other.



FIGURE 26: CASE STUDY INTERIOR SETTING

This room is well lit up and airy, although at the same time really well stocked with various sorts of tools and resources for doing arts and crafts, all stacked up orderly on a whole wall of shelves that go all the way up to the ceiling. There are two large tables in the middle of the space, where the children are invited to sit in groups of 2 or 3. When children are sat down, Barbara begins with another short introduction to the first activity, a '5minute very very quick drawing activity', writing or sketching down first ideas that children might have about how the playstructure should look and what it should be like. The whole room starts buzzing in a second she finishes her introduction, and groups of children start vividly discussing what they would like to have in their school playground. Barbara and Sarah walk around, joining into children's conversations and asking them about their ideas.

At first children are asked to write down or draw their ideas very quickly on a piece of paper, almost brainstorming them to have a plan for a later stage of building these ideas in a model. Barbara remains the key person leading the introduction, and repeats her instructions:

'with your paper and your pencils you write down ideas you talk with your partner. Then you make very very quick drawings just sort of illustrate, but keep your... nothing that takes a long time. This is really just about bringing your ideas to paper and it's a very quick exercise, we will have maybe five minutes for it.'

Barbara Kaucky, 23.09.2014

They are given a clear task to do, with a timeframe in which to complete it. Barbara tells them that their main job on the day is to design representations of their ideas, which they will 'try to incorporate as much as possible within the given resources' into their design that they will propose to the school. In this way, Barbara positions their task quite clearly within their design process – they are being brought in at the beginning, to give the designers their ideas, 'bits of which you will recognise' in the final design. She seems to be designing the tasks in a way that the results will be useful to her design work later.

Some of the children struggle with drawing or writing, and Barbara walks from group to group to make sure that they get on in whichever medium suits them best: 'it doesn't really matter if it is in a model or a drawing or just written down yeah?'

She approaches groups of children with positive remarks and open questions, to get the children to share the thoughts behind their drawings and written down ideas. Sometimes these questions lead to conversations not related to the design (such as how much it rained the previous week), but Barbara steers them back to design ideas for the play structure. Another way in which she approaches the children is to interpret their drawings in her own way, starting a discussion about what it could be and how. In one case, Barbara sees a girl's drawing of a tree and a slide coming down from it (Figure 27 left). She asks the girl if

that is a 'romantic tent' floating materials, and it this way she shares with the girl her vision of the drawing. The girl then explains her own vision of it, and negotiation stops at this point. But I found it intriguing how different views of the same sketch can be shared and discussed. Some ideas that seem feasible, like 'something that you can jump on' (Figure 27 middle), she translates into an actual spatial structure that can be incorporated into the design – it could be a built-in-ground trampoline.

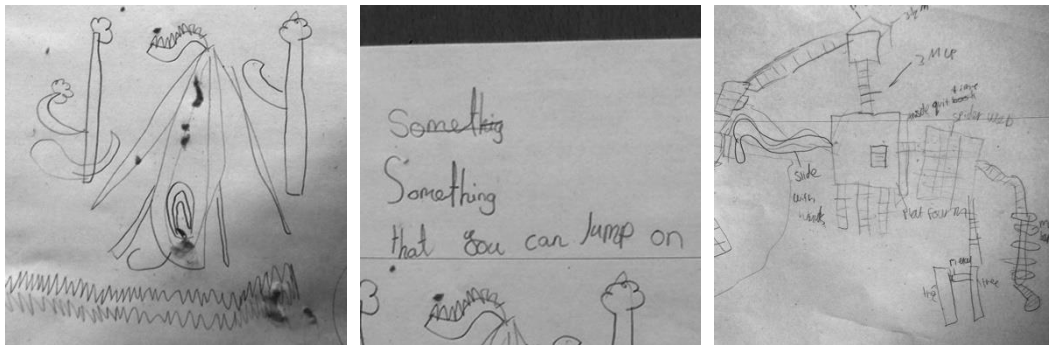


FIGURE 27: CHILDREN'S SKETCHES

This first stage goes on for about 10 minutes, and at some point Barbara decides they can proceed to the model making activity which takes about one hour.

There are model-building materials laid out in the centres of the tables, a variety of homemade playdough, ropes, sticks, leaves, twigs, conker shells and herbs (sage amongst others), which Barbara and Sarah had brought with them in the morning, having picked up the natural materials from a nearby park on the way to the school. Amongst the modelmaking materials there are also white cardboard models of the school yard where the playstructure was being designed, and models of another location in the school yard, where a more quiet space for children's breaks was also planned as part of this redevelopment.

From my field diary, 23/09/2014:



FIGURE 28: MODEL MAKING MATERIALS

Children seem to transition smoothly from drawing into model making, using all the materials brought in by the architects (Figure 28). This one hour long activity is the main part of the workshop, where the basic ideas for the design are supposed to emerge from children's work.

Barbara, Sarah and Alistair walk around, listening in on conversation and watching what children are doing, tapping into their ideas and asking them about it. Occasionally they go into longer discussions with the children about what they had replied to them, and sometimes they help them with building their models. Children imagine, discuss and make models of places where they would like to play and the kinds of play equipment they would like to use there. As they create miniature play structures, they test them with miniature versions of themselves – walking fingers or provided human figurines, accompanied by narrative. At some point, Barbara approaches the individual tables and asks the children what they are doing: 'what are your ideas tell me about it'; 'wow I love the trees that it's very oh this is so exciting'; 'what are your ideas tell me about it'; 'so tell me about the ideas this looks very exciting what is it'; 'what are your other ideas what did you write there something'. She prompts them to show and tell her ideas and children reply. After their response she often responds in various different ways, often offering very positive assessments, and expressing support and

encouragement to develop their ideas further and in new ways: 'now that looks really good'.

Understanding the scale of the models is important and Barbara introduces it by bringing two different sizes of human figures: 'these are two kids, this is a six year old and there is a ten year old, just so you get an idea how if you build something that's that high than that's actually pretty high'.

In general, the overall impression of the room is that it is buzzing with focused excitement and discussions within groups, and children only move around the space to look for a specific tool or material, or in some cases because they are simply curious about what another group is doing. Jo and I keep to the background, making notes and recording as close as we can with our glasses-cameras (which we later find out, fail us due to poor audio quality).

What strikes me about the designs is how quickly they develop, whether the children work on their own (Figure 29 left), in pairs (Figure 29 middle), or together with the architect (Figure 29 right). Because there is a tight time limit there is not a lot of hesitation, many designs go straight from rolling the playdough into the model. Very similar to what I observed in the case study in Cologne, children use their hands to show movement within the models, much more than they do provided models of up-to-scale little persons.



FIGURE 29: EXPRESSING IDEAS THROUGH MODEL BUILDING

Barbara is well aware that without client motivation, there is no case at all. The key predisposition for the whole involvement in design to happen is a supportive client, much like the head of school in this case study Alistair, who is really 'supportive in his attitude, he really wants it' (Kaucky, 2014a). I cannot help but notice the warm support that he displays at all stages of the process we witness. It makes me think about how that influences the aims that Barbara has for the day, his presence and comments, how do they influence the design process alongside the children. In a sense, he is part of the workshop himself, much affecting the preference of children, and yet he is in a way distanced from it all as a bridging link with the design team.

Groups present their models (15 min) and Barbara wraps up (5 min)

At the end there is a 15 minute show and tell type of presentations from the children, each group describing the model they had produced, and talking about what ideas it represents. Barbara gives occasional feedback and expands their ideas further, and at the end she wraps up with a brief speech thanking everyone for their inputs.'

From my field diary, 23/09/2014:

In the first part of this final closure, all groups show their models to the rest of the class (Figure 30), explaining their ideas as they go along. Barbara highlights some elements that children talk about in their presentations, and sometimes she points out some details she notices in the model even though the children do not mention them.



FIGURE 30: CHILDREN'S FINAL DESIGNS

In my mind, it resembles the prioritisation stage in design, the stage where architects evaluate the design proposals in front of them. In this way, it is very similar to what happens in a design crit in an architectural education context, which Barbara would have been used to from her own training. The key difference is that Barbara's remarks and evaluations are not there for the purpose of children, as they are not in the position to take home those remarks and improve on their designs. In this case, Barbara herself takes these remarks and uses them as a basis for the next stage in her design process. Why are Barbara's evaluations expressed publically and to the whole group of children, if all she needs is a list of notes of what the ideas were? It might be because the participants are children, that the process is designed in a more democratic and positive way, a not uncommon way of talking to children - in a way that validates their work. However the main purpose seems to be to share the ideas across with other participants as well as with the headmaster and the architect, and giving the opportunity to everyone to share their evaluations.

But the audience is not only the children - there is the head of school as well. He is also hearing what she is saying, and while she is accountable to the kids, she is also accountable to him. She is displaying to him how things will unfold, what further steps she will take as a designer and make sure the job gets done.

Perhaps this serves as a prioritisation stage to the children as well since they are asked to fix their ideas at a certain moment in their thinking process. What is not made explicit however is that it is clearly an evaluation by the architect in a form very similar to a design crit, and therefore a very clear display of validation and what ideas are assumed as acceptable. By inference, this goes as well for the dismissal of those ideas that are not picked out. The parallels with design crit reveal a strong impact of the design/architectural culture on the design process - however this opens further questions relevant to me - does this also have an impact on the process of building and shaping one's spatial literacy?

Barbara is also very careful with how she manages children's expectations from this participative process, about what they are led to believe would be fed into the design and what might not. It could be because this is after all a session with children, there is perhaps a more intensive sense of trying to accentuate positive appraisal of the work as well, valuing every group in some way and focusing on the positive outputs rather than none. How this affects the design process and Barbara's choice of preferences is an interesting question, however extremely hard to begin to explore, especially within the scope of this research, with the available data. The question of how children's work impacts the final design is ever present, but this research tackles it by adding more questions and aspects from which they could be considered, rather than offering any solutions or possible answers.

After all the presentations and responses are done, the last stage wraps up the workshop, when Barbara summarizes what happens next and thanks everyone for their collaboration. Barbara says she will 'and will also write down everything that you have told us about your ideas', which is similar to what Susanne did in Cologne example, except she was making notes at the time when children said it.¹⁴

¹⁴ This design project is the only one that was built and in use by the time the thesis was completed. I am grateful to erectarchitecture and the head of school for letting me visit and take photos of the newly built play structure, and I am grateful to the school children for demonstrating how popular it is:



6.5 Design talk in interaction: looking at the structure and content of interactions between children and designers when negotiating spatial literacies

To complement the rich description of ethnography, I draw on the principles of Conversation Analysis as a method for studying recorded conversations. By doing so, I bring the video recorded data under a microscopic vision, which may go by unobserved by participants unless zoomed into. The utterances, gestures and model materials used for communication are transcribed into great detail, clearly showing not only what is being said and done when spatial literacies are being used in action, but allowing me to analyse how this talk is structured by looking at talk sequence, overlaps, pauses, hesitance and accentuations on specific words, relative to surrounding utterances.

Both children and designers bring their own understandings and knowledge about space to the workshop, which is the meeting point of the ‘childhood’ and ‘designerly’ cultures. In a generalised sense, each one of these two cultures has its own specific view of how space is read and written – its own specific view of spatial literacy. The examples discussed in this section are selected to show negotiations of spatial literacies as they happen through interaction, recorded with video cameras during the period of ethnographic observation.

The key interest of this thesis how spatial literacy is negotiated through design talk and interactions is hereby analysed from the point of view of how the spatial literacies of the two meeting cultures of children and designers, manifest themselves through talk on a moment-to-moment basis. Applying a specific focus to the analytical aspect, I follow the approach of Applied Conversation Analysis (Antaki, 2011a) in order to explore some qualities of these interactions between designers and children.

Overall, the workshop structure is designed to involve the children to actively take part in the prepared activities, to introduce them to key skills and knowledge so they are able to participate, and eventually to do spatial design activities as prepared by the designers.

This thesis section follows the three-part workshop structure, roughly shared between all three case studies:

- i. Designers introducing the activity and doing so in ways which encourage active participation and are recipient-designed for an audience of children

The introductory part, where the designer introduces the aims of the planned activities and shows the model building materials, focuses on specific aspects and qualities/affordances, and how they can be combined together.

- ii. Children doing the design activities

The second and the core part of the workshops are the children making and doing, building and combining, drawing and talking about spatial designs. The architects here keep a more 'background' role, helping with building models in a technical facilitating role where needed, but most importantly, they also approach the children and ask them questions about their designs, and children answer with descriptions and gestures.

- iii. Focusing on preferences in final designs, connecting them with reality (what happens next)

The final part of the workshop is the architect wrapping up the design activities, and extracting the key points that will help out with the final design stage, performed in the design studio, without the children. This 'prioritisation' stage is designed in a way that helps the architects pull out what is the most important essence of children's design ideas, and the way this is done varies in the three case studies. Throughout the selection process, the designers display their own spatial values, and I explore the different ways in which they choose to communicate them to the children.

6.5.1 Designers introducing the activity

This section captures how designers introduce the workshop activities, and particularly how they do so in ways which encourage active participation and are recipient-designed for an audience of children. The introductions are organised largely as one way presentations: the designers stand in front of the participants,

talking about the structure of the workshop; however there are opportunities which involve children to participate and engage in them.

Through the prepared activities, the designers are giving the children an opportunity to experience space and artefacts representing space, in ways the children would not normally experience them. The introduction shows some aspects of designers laying out the daily setup that will later on allow the children to see and experience spatial qualities in a specific way.

Transcripts of the talks are here explored in detail, focusing on how the designers from Cologne and London case studies construct their talk to introduce spatial literacy to the children before they start designing spaces. The selected examples take part in the first stage of the workshops, before the children start their design activities.

London: ‘Exciting play structure’¹⁵

The introduction in London live design case study takes place in a room with a large screen showing the architect’s presentation, and the children are sitting on chairs, facing the screen. The architect does most of the talking; however the head of school joins in occasionally, introducing the key stages and the purpose of the workshop, whilst mentioning some aspects of what it means to design space.

There are many aspects of the talk in interaction recorded in all three case studies, which show that the talk, materials used for design activities and the overall structure of the workshops are being designed for an audience of children. This is reflected in the way that architects talk, which shows specific forms of constructing talk for specific recipients in the audience, and the ways in which it encourages engagement and participation.

The selected example captures some of these aspects, which are then more closely looked at in the analytical part below the example. This example also provides a detailed insight into some of many ways in which designers formulate their talk to help structure children’s participation at the event and engage them to take part in the activities. It offers a glimpse into what the designers assume the

¹⁵ To see transcription conventions used in the following CA examples, please see Appendix 3: Transcription conventions used in this thesis.

children to know as children, as spatial users, as a specific audience, and they design their talk accordingly.

EXAMPLE 1: 'EXCITING PLAY STRUCTURE',¹⁶

Barbara,
architect

Girls and boys
(facing Barbara
and Alistair)



Alistair,
Head of school

- 1 Bar: Okay have you (0.5) heard
anything about
2 why you are here today↓
((facing the children))
3 Gir: Yeah
4 Boy: [Yes]
5 Ali: [Yeah] we talked a bit
6 yesterday didn't [we]
7 Boy: [yeah]
8 Bar: so what do you know↓ (3.0)
9 Gir: ((raises hand))
10 Bar: go on
11 Gir: ah uhm:: (1.0) we're going
12 (to see some)
13 things about how we can
14 improve our playground↓
15 Bar: mh:m↑ (.) that's right
(1.0)
16 yeah (1.0) anybody
17 anything
18 more to say
19 Boy: how to (live it up)
20 Bar: Yeah exactly (.) so I (1)
21 also you will learn (.) to
22 work like architects (0.5)
23 I'm an architect (.) and
my name is Barbara (1)
((looks at the slide))
24 and what we will do today
25 is learn to find out about
26 architects (1) so firstly
27 (.) we will look at a

((facing the children))



Columbia Primary School workshop

- Learn to design like an architect:
1. What does an architect do and how does he do it?
2. Your project brief
3. Your project site
4. Initial inspiration images



((looks at the slide))

¹⁶ For key to notation and transcription conventions adopted by this thesis please see Appendix 1.

28 project we have done and
 29 we will (.) and
 30 a play structure we have
 31 done of course (.)
 32 and we will look at how
 33 did we do it (.) and
 34 then I will explain to you
 35 a little about where on
 36 the school playground (.)
 37 we will build some sort of
 38 **excit- exciting**
 39 play structure which you
 40 can design in a model form
 41 today (.) and we will talk
 42 about what this play
 43 structure could be (1) and
 44 then we will do it (1)
 45 that's the plan for today
 46 (2)



((changes slide))

((changes slide))

47 and now just an example
 48 (.) project we've done-
 49 has >anybody been< to the
 50 Olympic park (.)
 51 Tumbling Bay playground↑
 52 (2)



((several hands raised))

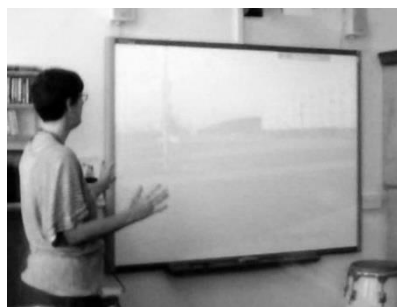
((several hands raised))

53 do you know Tumbling Bay
 54 playground all of you↑ (.)
 55 d'you like [it]

56 Boy: [yeah]

57 **Ali: I think the children in**
 58 **year fi:ve you went there**
 59 **at for a trip didn't you**
 60 **at the end of the year**
 61 **four to play there (.) and**
 62 **then lots of them carried**
 63 **on a bit (.) I think (1)**

64 Bar: so we are the architects



((turns to the slide))

((turns to the slide))

65 who designed Tumbling Bay
 66 playground and before the
 67 playground was there (.)
 68 before we started work on
 69 it there was nothing (.)



((points on the photo))

((points on the photo))

70 there was just a <flat
 71 piece> of concrete

Barbara opens the introduction using the question in lines 1 and 2: ***‘Okay have you heard anything about why you are here today’***, to elicit a display of knowledge from her audience, designed in a way that engages them right from the start. Her question is aimed at all of the children at the same time, and by expecting an answer from them she is inviting them to participate in the introduction from the very beginning. While receiving several positive responses from the children, accompanied by raised hands, the head teacher is the one that responds in lines 5 and 6 that ***‘we talked a bit yesterday didn’t we’***, and by using the word ***‘we’*** he aligns with the pupils and positions himself as part of the group that talked about it. Although he is aligning his response with the children, he is still facilitating the task together with Barbara, by inviting further explanation, highlighting they only talked ***‘a bit’*** about it.

This is then followed by Barbara initiating an open question in line 8, ***‘so what do you know’***. Julia’s answer in lines 11-14: ***‘We’re going to see some things about how we can improve our playground’*** is received by a specific reaction from Barbara – she does not treat it as new information; she does not correct it or expand it into a discussion. There are many things she could have picked up on within that answer and expanded into an introduction to the activities for the day. She however responds in line 15 with an affirmative ***‘that’s right, yeah’***, which resembles a form of ‘third turn evaluation’. ‘Third turn’ here refers to a turn within a sequence of conversation – Barbara’s question being the first turn, the children’s answers the second turn, and expected response from Barbara being the third turn, in this case affirmative to what the children were saying. This type of response can frame Barbara’s utterances in lines 1-2, 8, and then again in lines 16-17 (***‘anybody anything more to say’***), to function like ‘known-answer questions’ (Schegloff, 2007), meaning that they elicit a response from the children that Barbara is going to evaluate in terms of its correctness.

Such three turn speech sequences with a known answer are not uncommon in educational settings – asking a question, giving an answer, and evaluating the correct and/or appropriate answer (Sinclair and Coulthard 1975; Mehan 1979; Drew 1981; Brice Heath 1983; Pine 1992; Grosse and Tomasello 2012 and others), with the intention of teaching. To show again the three turns from above mentioned example:

First turn (Barbara, line: 8): ***‘so what do you know’***

Second turn (Julia, lines 11-14): ***'We're going to see some things about how we can improve our playground'***

Third turn (Barbara, line 15): ***'that's right, yeah'***

The three part sequence in this case as well as many others found in my data act in a slightly different way. The approach is not used to 'do teaching', but rather to 'elicit participation'. The three part sequence is used to elicit something from the children about what they may already know about the purpose of the workshop. This is quite a general kind of action sequence, which could be used in a variety of contexts involving children.

It is only after these first couple of engaging questions that Barbara first brings in the word 'architects', in lines 20 and 21: ***'you will learn to work like architects'***. She is making it relevant to the children, both the profession they might or might not know by this name, and the fact that they will learn about it, and how to work like it. Furthermore, she only introduces herself by first name and profession in lines 22-23: ***'I'm an architect and my name is Barbara'***, showing another one of the many aspects that her talk in presentation is being designed for specific recipient group. If this were, say, a group of adult design participants, it would have been more acceptable for her to introduce herself at the very beginning, most likely not using only her first name. In the same manner, if she was addressing a group of children for which she would think that her profession is not relevant, she would have introduced herself in a different way. But here she leaves it until later in the introduction, and phrases it in a way that will be relevant for the workshop. At this point in the introduction, it does not matter what her profession or role within the workshop is; she is there to elicit participation from the children, and introduce them to some new information.

From the beginning, Barbara frames the workshop as an experience, where the children will discover new things. At some points she describes the workshop activities including the word '***learn***': saying in lines 20-21: ***'you will learn to work like architects'*** and in lines 24-26: ***'what we will do today is learn to find out about architects'***. When describing the learning experience, she uses both words '***you***' in line 20, and '***we***' in line 24 when referring to who will be doing the learning on the day. Barbara includes herself into the group of

children referring to them all as '**we**' (line 24), which in fact is an inclusive form of 'you', meaning 'me and you'.

There are more examples of this linguistic aspect which is another way in which Barbara forms her speech to engage children to participate. Some examples of an inclusive form of '**we**' appear to refer to Barbara and the children, where she could just as easily have referenced the children as '**you**'. This practice works to formulate Barbara and the children as doing these things together. For example, in lines 24 ('**what we will do today**'), 27 ('**we will look at**'), 29 ('**we will**'), 32 ('**we will look at how**'), and 41-42 ('**we will talk about**'), the '**we**' is referring to the children Barbara is talking directly to. Selecting the word '**we**', instead of '**you**', she is self-referencing as part of a plural 'you' that will be doing the activities. By including herself into the group of children, she perhaps works to make herself more approachable, minimising the difference between herself and the children.

Some other uses of '**we**' in lines 24-68, are more conventional, referring to Barbara and her colleagues at the architectural practice: in lines 28 ('**project we have done**'), 30-31 ('**a play structure we have done**'), 32-33 ('**how did we do it**'), 48 ('**project we've done**'), 64 ('**we are the architects**'), and 68 ('**before we started work**'), the '**we**' refers to Barbara and her practice. The above described two uses of 'we' (i.e. the first one being the inclusive 'you', and the second one being Barbara's practice), are sometimes used in the same sentence, and in her talk, Barbara switches from one meaning of '**we**' to the other. Sometimes within her talk, who the 'we' refers to, may also be useful as an ambiguous reference, including children into the design and construction process in lines 37-39 ('**we will build some sort of exciting playstructure**'), and line 44 ('**and then we will do it**').

Barbara is making her talk directly relevant to the children. There are clear examples of Barbara's talk being designed to a group of children, which would look odd if they were used to introduce the same design activity to a group of adults.

In lines 38-40: '**exciting play structure that you can design in a model form**' Barbara uses an interesting combination of word selections. By referring to the mode of design expression as a 'model form', she uses a specific terminology, common to spatial design. She could have referred to the form of

building models in many different ways. She could have been more specific, described what that involves them to do, but she chooses to use a specific term for it. These are concrete terms for spatial elements, which are brought into the discussion even before the actual workshop begins, thus pre-setting the level of what is expected, acceptable and what should perhaps be through in a different ways. Choice of words, even the use of some specific professional terms, is interwoven into the very introduction to the workshop, together with instructions of what to do. However describing the new play structure as **‘exciting’** (line 38), Barbara moves away from a formal objective terminology, and adds an emotional element to it, perhaps particularly engaging to children. Barbara chooses to describe their playground design as something really exciting, not merely describing a picture on a slideshow. By adding more ‘emotional terms’, she appears to be trying to keep the children interested and enthusiastic. It seems like she is designing her talk to encourage the children to participate, in a way that would possibly seem patronising if it were used with adult audience.

In the final part of the introduction, Barbara lists quite clear steps of what **‘learn to find out about architects’** (from lines 25-26) will mean in this workshop. These steps outline the plan of the day, and resemble a process, which a spatial design student would undergo within an educational process:

Precedents	lines 27-28: ‘firstly we will look at a project we have done’
Process	lines 32-33: ‘we will look at how did we do it’
Location	lines 34-37: ‘I will explain to you a little about where on the school playground we will build’
What	lines 37-39: ‘some sort of exciting play structure’
How	lines 39-41: ‘which you can design in a model form today’
Discuss	lines 41-43: ‘we will talk about what this play structure could be’
Build	lines 43-44: ‘and then we will do it’

In the final part of her introduction, Barbara begins her plan of showing the sequence of the design process by showing children a playground they all know and have visited, and she links it with an aspect of a design process – first there is nothing, and then there is this exciting playground. She begins her **'plan for today'** (line 45) with an example of playground design that her own architectural practice had been involved in previously, and is not located too far from the part of London where the school is located, so some of the children would know it and would even have visited it. As this is the first mention of the Tumbling Bay playground, the question in lines 49-51: **'has anybody been to the Olympic park Tumbling Bay playground?'** and the question in lines 53-55: **'do you know Tumbling Bay playground all of you d'you like it'** appear to function as getting the children again to actively participate before saying anything about the playground. It is there to set up another main action by the architect – her announcement that her practice designed that playground.

Her utterances, although clearly in interrogative form, do the action of a request for a relevant sub-group of the audience to make themselves visible. Again this seems a common practice to engage the audience in educational settings, as well as an action taken by professionals dealing with a group of children. This is another way in which the architect acts to get the participation and involvement of children. Throughout her introduction, Barbara continues to engage children in her presentation, asking a question and addressing all children. As the question requires a yes or no answer, children whose answers would have been affirmative, instantly react with raising their hands. The head of school joins in here, reminding the children that they should remember the playground, giving some background to why so many children know the mentioned playground in lines 57-60: **'I think the children in year fi:ve you went there at for a trip didn't you at the end of the year'**.

It is only in lines 64-66 that she finally reveals that her practice is in fact responsible for designing that playground (**'so we are the architects who designed Tumbling Bay playground'**). She is setting up the scene, linking knowledge to something they already know – then she links it with the design process which makes her former questions relevant – in a way she was setting up the scene with prior questions in lines 49-51: **'has anybody been to the Olympic park Tumbling Bay playground?'** and in line 55: **'d'you like it?'**

to link a spatial design example they are familiar with, with introducing herself and her work to them.

Cologne: ‘This is very very exciting for us as well’

The introduction in Cologne takes place around a large table, which is combined using three tables, as this workshop takes place in the actual space which is being redesigned – a café/restaurant. All six children, their teacher, a mother of two of the children, the architect and two assistants are all gathered around the table, as Susanne gets ready to introduce the workshop to everyone. On the table there is the model of the design proposal that the architects bring along, and all the colourful ‘shoe box dream worlds’ that the children produced in the previous workshop. She begins by summarizing what work she and her colleagues have done in the meantime since the previous workshop, and how they incorporated the children’s ideas into their proposal. After that she briefly introduces the structure of the workshop, and how the pairs of children will take turns to be involved in each of the three activity stations. We, the researchers, are mentioned by Susanne as ‘our three ladies from Sheffield’, who will interview children at one of the activity stations.

EXAMPLE 2: ‘THIS IS VERY VERY EXCITING FOR US AS WELL’



- 1 Sus: jetzt wir haben heute (0.5) e:rm (0.5)
 now we have today (0.5) e:rm (0.5)
- 2 teilen uns ein bisschen a:uf (.)
 divide ourselves a bit (.)
- 3 und zwar haben wir drei Stationen (.)
 and indeed we have three stations (.)

- 4 Martin (.) macht gleich die:: erste Station
Martin (.) will make the:: first station
- 5 er wird euch (.) den Kindern zeigen (1.0)
he will to you (.) the children show (1.0)
- 6 was hier auf [diesem-]
what here on [this-]
- 7 Tea: [ach Modell] sehr spannend
[oh model] very exciting
- 8 Sus: ((leans towards Katja))
ja das ist auch
yes this is also
- 9 Tea: [spannend jo↑]
[exciting yes↑]
- 10 Sus: [sehr] für uns auch
[very] for us as well
- 11 sehr sehr spannend das muss ich sagen
very very exciting I must say
- 12 >wir haben< (.) lange an euren
>we have< (.) spent a long time at
- 13 Kisten gearbeitet
working on your boxes
- 14 wir haben sie fotografiert
we took photos of them
- 15 gezeichnet hat das alles der:: Martin
Martin drew everything
- 16 um dann daraus Ideen zu entwickeln
in order to then develop ideas from this
- 17 und dann noch Modelle gebaut
and then also we built models
- 18 eins nach dem anderen
one after another
- 19 und wir dachten
and we thought
- 20 °das ist ein bisschen zu einfach° (0.8)
°that is a bit too simplistic° (0.8)
- 21 [jetzt habt aber]
[but now you have]
- 22 Tea: [aber es gab gab doch viele verschiedene]
[but there were many different]
- 23 Richtungen (.) das [war doch]
directions (.) that [was nevertheless]
- 24 Sus: [ja ja ja]
[yes yes yes]

- 25 Tea: auch- auch [doppelt so schwierig]
also- also [twice as **difficult**]
- 26 Sus: [ja:] aber es gab ganz viele interessante
[ye:s] but there were many interesting
- 27 (.) e::rm (.) Überlagerungen >zum Beispiel<
(.) e::rm (.) overlays >for example<
- 28 ganz viele von euch haben gedacht dass man
quite many of you thought that one
- 29 ein ganz bestimmtes To:r oder (.)
a very specific ga:te or (.)
((gestures towards Mieke))
- 30 du hattest einen Tunnel (.) oder↑
you had a tunnel (.) right↑
- 31 Mie: ((nods))
- 32 Sus: und dann (.) bei dir
and then (.) in yours
- 33 diese Eingänge die verspiegelten (0.5)
these mirrored entrances (0.5)
((points at the shoe box world and looks at Timon))
- 34 und (0.5) das fanden wir alles sehr spannend
and (0.5) all that we found very exciting
- 35 °(und haben das)°
°(and we have)°
- 36 das ist die erste Gruppe (0.5)
this is the first group (0.5)
- 37 dann gibt's eine zweite Gruppe (1.0)
then there's a second group (1.0)
- 38 die (.) e:rm die haben so einzelne (.)
who (.) e:rm who has these individual (.)
- 39 Module (.) das heisst also
modules (.) so that means
- 40 verschiedene Situationen gebaut (.)
building different situations (.)
- 41 drinnen auch mit e:rm Kindern
within which with e:rm the children
- 42 man kann sitzen (.) stehen oder
one can sit (.) stand or

((gestures the mentioned activities with hands))
- 43 in den Spiegel schauen (.)
look into mirrors (.)
((hands mimic the action of looking through something))



((gestures towards Mieke))



((points at the shoe box world and looks at Timon))



((hands mimic the action of looking through something))

44 das würden wir mit zwei Kindern (.) e:rm
 that we will with **two children** (.) e:rm

 ((turns towards us))

45 auch wieder machen (.)
 again make (.)

46 und als dritte Statio::n (0.5) gibt es
 and as third sta::tion (0.5) there are

47 unsere Damen aus Sheffield↑ (0.5)
 our ladies from Sheffield↑ (0.5)

48 die (0.5) <drei> (0.8) erm
 these (0.5) <three> (0.8) erm

49 möchten gerne
 would really like to

50 mit den Kindern sprechen (1.5)
 talk with the children (1.5)

51 wie (.) ja (.) wie ihnen
 how (.) yeah (.) how you

52 der Workshop hier gefallen hat
 liked this workshop here

Showing another way in which the designer designs their talk showing they are aware they are talking to children, by aligning with the talk of the children's teacher much like in the previous example with the head of school. The adults use emotionally charged words such as **'interesting'** as a way to engage the children in the project. It is the teacher who first brings in emotive language such as 'exciting' in lines 7 and 9, which Susanne immediately picks up and amplifies in line 11: **'very very exciting'**. The teacher also uses emotive words such as **'difficult'** in line 25 to express a perhaps more challenging nature of the design work, to which Susanne responds with **'yes, but there were many interesting overlays'** in line 26 to show that even though it was challenging, it was still a positive aspect to it. These emotional aspects that the teacher and Susanne use in their talk again show that participation is being encouraged through emphasising positive aspects of it, even when it is challenging. The role of the teacher is in a way an intermediary, at some point liaising with the children and at others talking to aid the designer's point.

Data in German language allows me to see the difference of when 'you' is used in plural or singular, which makes it clearer to notice locations where Susanne is using her talk to refer to the group of children as a whole, for example in line 28, she is addressing all children at the same time: **'quite many of you'**. In line 30 (**'you had a tunnel, right?'**), she is referring to an individual child, designing

the talk especially for this one girl. It is clear who she is talking to as she makes eye contact with the girl, refers to her as '**you**', and does a hand gesture towards her. But what makes it relevant that Susanne is designing this talk just for the girl, is the fact that she describes a feature from the girl's design from the previous workshop ('**a tunnel**'). This way of individualising talk to a specific audience is called 'recipient design talk' (Sidnell, 2010, Sacks et al., 1974), or designing talk so it displays prior knowledge or connections between interlocutors. Susanne does another 'recipient design talk' referring to a boy's 'dreamworld' feature in lines 32-33 ('**and then in yours these mirrored entrances**'), looking at Timon and simultaneously pointing at his 'dreamworld' box in front of him. The way she is designing her talk especially for particular children, she is showing to all the children that she thought about their ideas and put them into practice. By showing that she is remembering, she is displaying that what children do, actually matters to her and to the design process.

Summary of both examples

The ways, in which the architects introduce the activities and the structure of the workshop, show elements of talk that is designed for a group of children. These first two examples provide a detailed insight into some of many ways in which designers formulate their talk to help structure children's participation at the event and engage them to take part in the activities. The way in which Barbara chooses to describe the playground structure as 'exciting' and the ways in which Susanne and the teacher evoke the fun in the elements, show that they have a certain stance about how it should be received by the children. They do not emphasise the reasons why the play structure and the model building materials might be fun and exciting to the kids, but they show the need to represent them in this way.

The introductions to the activities set the foundations and ground rules for how the communication will be organised throughout the workshops. Children and designers have yet to establish their roles and identities within this newly established setting, and studying the introduction provides some insights into how the designers lay out those ground rules. Both examples can be interpreted as showing elements of 'institution relevant identities' (Heritage, 2004a, p. 106), which means that people adopt roles that are most fit to the institutional context

where they are. A person's role may be different in another institutional context, as well as within the same institution as circumstances change (Ibid.). My data shows that in the background, the designers are faced with a complex task of navigating many identities at the same time while introducing the workshop activities: they are acting the role of being adults, workshop leaders, facilitators that engage children in activities, elicitors of information/ideas, and at the same time following the role of design professionals who at the end of the day have to produce a design proposal to satisfy the client and the regulations, all within a restricted period of time. Acting on these identities influence how designers choose to deliver the introductions, and are reflected in the ways they design their talk to the children.

Both examples illustrate instances of 'recipient design talk' (Sidnell, 2010), with the designers being seen to design their talk in certain ways. This introductory talk made by the architect serves as a good example of the way she introduces the workshop activities as well as also showing some assumptions of the children's literacy regarding space. Talk is always designed for a particular type of recipient, who possesses certain knowledge (Sidnell, 2010). Therefore she is orienting her speech towards the children not solely on the basis of them being children, but also them being an audience with a specific knowledge of space and specific ways in which to communicate it. The 'recipient' is never a simple construction, as this example shows – the recipient is a complex combination of many identities, assumptions and knowledge. It offers a glimpse into what the designers assume the children to know as children, as spatial users, as a specific audience, and they design their talk accordingly. By showing enthusiasm, often joined in or even initiated by another adult, the designers try to engage the children in a fun way. As soon as in the introduction, they begin to facilitate children's participation in spatial design activities, and the way they talk about space shows some aspects of their own spatial literacy – reading space.

Also the talk by the adults is 'personalized' to some individual children. In the Cologne example this is done by the architect pointing out what a particular child or children did in the previous design session. The example is a bit different in London as this is their first meeting, so Barbara would not have prior knowledge of the children. In this case, the head teacher however points out personally relevant facts for the children: the playground that he knows some of them have been too.

These two examples show how the teachers act as intermediaries between the designer and the children. Examples show that they sometimes liaise with the designers, contextualising what the designers say, making it relevant for the children. In Example 1 the head of school makes it relevant for the children by reminding them they had visited the mentioned playground, and Examples 1 and 2 show the teachers using emotionally charged adjectives to enthuse the children. They also voice some responses of the children (in Example 1 the head teacher responds to the designer on behalf of all children).

Even though at first glance, the introductions may seem to resemble a ‘teacherly’ approach, there are many examples within the designers’ talk that they use, to show that is not the case. For example, Barbara uses the ‘known response question-type elicitation’ as a means to engage the children and have them participate rather than test their knowledge about the question she asks. The examples also clearly demonstrate that designers’ talk is being constructed to encourage participation and engagement. The acts of trying to ‘sell the project’ in the initial stages, by using emotionally charged expressions such as ‘exciting’ and ‘fun’ to describe the activities, are designed especially for a child audience. It may seem obvious that the context should dictate such talk, but it is important to acknowledge what type of relationship is being ‘done’ through talk in the first minutes of the workshop, to understand the talk in the main – design stage of the workshops. The architects are not trained professionals to teach this specific age group of children. This fact adds to the complexity of the situation the architects find themselves in. As illustrated through the ethnographic and autoethnographic account of all three case studies, the designers need to navigate many roles and identities in these workshops.

6.5.2 The building activity: design talk in interaction

The main body of work in the context of workshops is done during the time when children begin their design work, using provided model building materials to combine them into spatial representations of their imagined designs. The focus of the workshop is on children doing and making, and the key dialogues between them and designers take place at various moments during those doing and making activities. This stage takes about 20–30 minutes in Cologne, and about 45 minutes in London case study.

This section examines the structure of how the dialogues between designers and children are composed, by looking more closely at a selected example from each case study. What at the first glance seem like spontaneous chats that arise during children's building session, are in fact conversations that follow a similar structure in both case studies, which possibly reflects the fact that in both cases, the designers are working to achieve similar outcomes from the session. There are variations in the structure of these conversations, but in general they follow a very similar structure.

London: 'Periscope'

In the example we see the children writing a spatial element into the model, when Barbara approaches with her question. After they jointly come up with the term for the design element they were building ('a periscope'), Barbara reads the model space as it would appear in the real world and recognises a problem: the periscope will be peeking into somebody's apartment. Her reading of the model at the level of actual space is taken on board by the children, and they decide to locate the periscope in another place, where it would be less intrusive (peeking into the adjacent street).

EXAMPLE 3: 'PERISCOPE'

Barbara
architect

Salman, 7

Cailey, 9



← The periscope

← Playground model

1 Bar: what's the hole for

2 Cai: uhm [it's]

3 Sal: [it's] for this

((points to the straw in
Cailey's hand))

((points to the
straw in Cailey's
hand))

4 Cai: [you're sort of]

5 Sal: [so if-]

6 Cai: (sat) there and you're seeing
the things=

((showing on the periscope
model))

((showing on the
periscope model))

7 Sal: =it's in it's like

[do you ()]

8 Cai: [you look in] there and it

9 Sal: so if (.) so if you're (.)

[at the sea]

10 Bar: [oh is it] like a peris- is
it like a periscope ((Cai
nods)) like

[a periscope in a submarine]

11 Sal: [so if you wanted]

is it like (.) yeah like if you
wanna look under water and
you're not allowed (in the
water) you get that that to
look under

12 Bar: mh::m I think (.) o:h let me
(0.5) let me think for a second
(about this one)

((leaves the table))

13 Sal: ()

14 Bar: I will try to do you a hole
yeah (.) I don't think I've-
(0.5) I don't have quite the
right tool to do it but I think
I can (5)

((carving a hole in the model
wall))

((carving a hole
in the model
wall))

15 Bar: so it's like this spying device
to spy into these people's flat
here↑ (.) hehehe

16 Sal: uhm a bit (1) yeah



17 Bar: hehehe[he]

18 Sal: [but] I just realised
((to Cailey who is looking for
scissors))

19 Bar: maybe it's (.) maybe it would
be- it would be less annoying
for the people who live there
if we just

((showing the location on the
model))

((showing the
location on the
model))

build a periscope to look over
the wall what's going on
outside=

20 Sal: =yeah=

21 Bar: =d'you think

22 Sal: (0.5) shall we- we cover this
one

((pointing at the hole))

((pointing at the
hole))

then

((points to the location))

((points to the
new location))

[I think it should be there]
23 Bar: [yeah let's cover it] haha (2)

24 Sal: () I think that'd be annoying

25 Bar: I think they wouldn't like it
much would they (.) they would
[probably complain]

26 Sal: [I think] that there's
(cappy) (0.5) that's actually
[cappy]

27 Bar: [ye:ah] I know in the ground
floor there's a restaurant
isn't there (.) but on the
upper floor probably someone
lives on the upper floor I
would I would think

28 Sal: I think it wouldn't be very
nice for them

29 Bar: no (.) he[hehe]

30 Sal: ((to Cailey and Somaya))

I don't think it should be here
coz there's (cappy) here



31 Bar: but you know I love your
periscope idea it's like a
viewing device a really
exciting one you should do one
that looks over the [wa:ll]

((gesturing the location,
direction and length of the
periscope against the wall))

32 Sal: [I think it should] be like
this (.) like there

((places periscope on the
wall))

((places
periscope on
the wall))

33 Bar: yeah exactly that's a
very good idea



This example shows the ways in which the architect is dealing with a suggestion which is aligned with her values. Her initial question in line 1 is designed to elicit more information about a specific place in the model (*'what's the hole for?'*). This is a very specific question about the children's model, however many other of Barbara's questions in other examples when she approaches children, tend to be framed as positive assessments and appraising questions (*'that looks well what is it?'*, *'so tell me about the ideas this looks very exciting what is it?'*, *'wow I love the trees that's very oh this is so exciting'*) or quite open questions (*'what are your ideas tell me about it'*, *'what are your other ideas?'*). With her comments, Barbara is getting the children to participate further, by asking them to tell her how they see what they have been doing.

Following Barbara's question in line 1 of the above example, their individual literacies enter a word finding sequence from lines 2 to 9, where they are negotiating how to represent their imagined, abstract ideas, with words (by looking for the right term for it – *'a periscope'*, as coined by Barbara in line 10). After they establish the term, they start a sequence about the location of this element – 'the hole through the wall'. Barbara at first goes along with this idea by physically engaging in what has to be done in order to fulfil this representation of a spatial element, by carving a hole in the model wall (line 14). However she questions the location which is not aligned with her values about what can be done in the real world, and what is acceptable as spatial design, which is reflected in the fact that she elicits more information about the nature of the spatial element, or what it is intended to do (line 15: *'so it's like this spying device to spy into these people's flat here hahaha'*). It is also done with a bit of

humour, and she laughs at the end of her turn, showing her evaluation of that idea. Salman understands that this is the architect's evaluation and accepts her alternative suggestion, even phrasing it as his own idea at the end of the sequence (line 32: ***I think it should be like this like there***'), which Barbara accepts and rewards as his own idea (line 33: ***yeah exactly that's a very good idea***').

In a way, Barbara here is managing an implausible idea of building a periscope through the wall of an inhabited building, by transforming it into something slightly different, which is still a good idea, however at another location. It keeps the functionality of the periscope (line 31: ***it's like a viewing device, a really exciting one, you should do one that looks over the wall***'), so not rejecting the idea of the periscope by saying no (however, in line 28 similar to no: ***I think it wouldn't be very nice for them***'), she is opening different options and letting them know they are still free to write space in the ways they would like, and are in alignment with spatial requirements.

This example shows one way of talking about the objects that focuses the children's attention on the boxes and the type of spatial qualities that the designer wants them to notice about them. We can see how Barbara introduces children to specific model features during the model building stage, which will help them understand the model better, and be able to write space in the relevant context. In this case, a vertical sheet of cardboard is used as wall element in the model of the school playground. At the beginning, it is discussed for its actual properties: it is a hard piece of cardboard, which makes it difficult to carve a hole into. However later on, the real world situation creeps in when the child reveals the true purpose of carving the hole into the cardboard, and that brings in the real world situation into the discussion: the cardboard wall is in fact somebody's house. Drilling the hole in their wall and looking through it would intrude this person's privacy. This example links with the way Barbara engages the children to think about space, yet it adds something to their spatial literacy on the level of how model building relates to the real world situation.

Cologne: 'Mirror'

After a very brief introduction of the workshop structure in the German case study (as described in the previous section), Susanne specifically demonstrates

some aspects of the elements or ‘modules’ to each pair of children that comes to her ‘building station’, before they can actually begin building their models.

Two boys - Timon (7) and Markus (6), are sat behind the table, where the model building will take place shortly after this introduction. They are accompanied by the lead architect Susanne and her two assistants Tina and Zuzana, and Timon’s mother Diana. Susanne is demonstrating reading and writing space through engaging with the objects, through showing both boys the key feature of the element, and by encouraging them to engage with the module. Alongside her demonstration she is using hand gestures, parts of modules, and little human figurines to imitate movement through the module, and play out various activities that can be undertaken in such a space of human-fitted scale. She asks them to engage with the modules as if they were those little persons using it, but at the same time makes sure they also look through them using their actual bodies, to see the module’s key feature.

The modules being introduced in this particular example have a small mirror inside of them, positioned under an angle, which allow a person to see into another room or space without entering. Understanding this function requires physically engaging with the module; and the module itself as well as its other functions are expected to be used in writing space activities that follow.

EXAMPLE 4: ‘MIRROR’



1 Sus: schau mal hier da rein
look here through there
((location pointing for Timon))

2 und du musst
and you must

3 da reinschauen oder↑ (1)
look through here right↑ (1)
((location pointing for Markus))

4 Zuz: >ja<
>yes<

5 Sus: seht ihr euch da gegen[seitlich]
do you see each other from opposite [sides]

6 Tim: [ja::]
[ye::s]

7 Mar: °°ja°°
°°yes°°

8 Sus: ja↑ (4)
yes↑ (4)

9 Tim: waru:m↑
why: ↑

10 Sus: tja:(h) hah (1) >findest du das<
we:ll(h) hah (1) >do you find the<

11 Mar: ((smiles))

12 Dia: ((laughs))

13 Tin: ((smiles))

14 Tim: °ich weiss nicht°
°I don't know°

15 Sus: (1) wie (.) wie dann
(1) how (.) how then

16 Tim: °wegen den Spiegel°
°because of the mirror°

17 Tin: °gena:u°
°exactly°

18 Dia: [°°gena:u°°]
[°°exactly°°]

19 Sus: [genau] und jetzt hammal hier (3)
[exactly] and now we have here (3)
((taking a man figurine))

20 Sus: einen Herrn (2)
a man (2)

21 Sus: der hier sitzt (4)
who sits here (4)
((positioning the man figure into the module))



((location pointing))



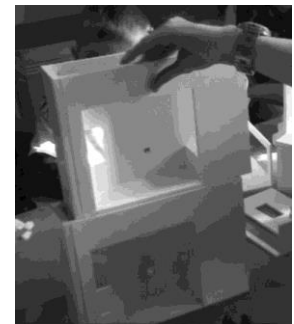
((positioning a man figurine into the module))

- 22 siehst du den[↑] (1.5)
do you see him[↑] (1.5)
- 23 im Spiegel[↑]
in the mirror[↑]
- 24 Tin: wenn du wieder dieses kleine [Loch durch]
if you again look through this [little
hole]
- 25 Lan: [wieder
dadurch] [again
through]
dieses kleine Loch (2)
this small hole (2)
- 26 Tim: °ja°
°yes°
- 27 Sus: °super° (1) so (0.5)
°super° (1) so (0.5)
- 28 das ist ein Bauelement (.)
this is one building element (.)
- 29 das wir haben (1) dies haben wir gleich-
gleich
that we have (1) here we have the same-
same
- 30 zweimal (.) kann man zueinander stellen
twice (.) one can put them on top of each
other

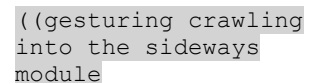
((placing two elements on top of each
other))
- 31
- 32 oder man kann (.) denken okay ich krieche
da rein
or one can (.) say ok I'll crawl
in here

((gesturing crawling into the sideways
module))
- 33 das heisst sozusagen (.) em sieht man von
(.) von
that means basically (.) em we see one of
(.) of
- 34 euch der sitzt an hier (1)
you sitting here (1)
- 35 Sus: ((to Zuzana))

(das muss ich) () (weggegangen)
(I have to) () (coming off)
- 36 ode:r (0.5) um: (.) 'ne Erwachsene die
kann (.)
o:r (0.5) um: (.) an adult who
can (.)



((placing two elements
on top of each other))



((gesturing crawling
into the sideways
module))

37 Tim: ((picks up an adult figurine near him))

38 Sus: die kann da kaum hin stehen (.)
who can barely stand up inside (.)

39 kaum erreicht (.) da oben da (.)
just barely achieves (.) up here (.)

40 Tim: ((places the figurine into the module,
following what Susanne is doing))



((places the figurine
into the module,
following what Susanne
is doing))

41 Sus: da kann er gar nicht mehr stehen
here he can not even stand up

((takes the figurine from Timon and places
it within the module))

>so er muss sitzen< (.)
>so he has to sit< (.)

°man kann so reingehen°
°one can go in there like this°

((takes the figurine
from Timon and places
it within the module))



Susanne does not introduce the first element or 'module' by its visual appearance, name, or another characteristic; she chooses to introduce it by prompting the children to engage with the element to experience what its main function does (see line5: '**do you see each other from opposite sides?**'). She sets up the activity and manipulates the setting for the boys to experience the materiality and functionality of the modules for themselves; she does so in a way that extends the action of showing or demonstrating: she creates an opportunity for the children to get the first-hand experience of the module functionality. She encourages them to physically engage with the modules, and the way she talks about the modules is accompanied by her physically manipulating the materials herself, shows that she is doing it in order to engage the boys to do the same.

After Timon says he has indeed experienced the mirror element as he had been instructed to do, he then expresses surprise of how is this possible in line 9: '**why?**', which Susanne treats as a confirmation of the fact that he understood

how the module works. In recognition of the fact that he experienced the module function in the way that she intended it, she does not give the correct answer, but prompts him further to see if he understood the reason behind it as well. In line 10 (*'well(h) hah'*) a short laughter accompanies her recognition of his understanding, and his further curiosity about the module.

The ways in which Susanne sets out the activities aimed at getting the children to experience the objects, show an educational purpose. She is asking them to experience for themselves, what special 'affordances' certain elements offer to them as builders of models, and at the same time prompts them to imagine that these are actual spaces, and that they are little figurines using these spaces. She focuses on specific characteristics of the model building materials when she introduces them, even though there are many different ways in which these boxes can be used. She selects the ones that can represent some spatial aspects in real life. Apart from this introduction being a very visual experience for the children, it is also a very tactile and physical, as they are asked to interact with the modules. The way, in which the activities are designed, she makes sure that the experiential learning is maximised, and focused on. She tries to set children's experience of some specific ways of perceiving spatial features, which are not part of the formal education – she is bringing her own version of spatial literacy into classroom, the aspects that she feels are vital for a successful second part of the workshops.

Susanne starts a new sequence in line 19-21 (*'and now we have here a man who sits here'*) as soon as she comes to a shared agreement with Tina and Diana that what Timon had said about the functionality of the mirror in line 16 (*'because of the mirror'*), was in fact correct. Susanne's tone supports her starting a new sequence; it is louder, more articulate and faster, especially compared to her closing down a previous sequence, where her voice become quieter and with more pauses.

Tina's and Lana's utterances *'exactly'* in lines 17 and 18 are much quieter than the one of Susanne, in line 19, which shows they are letting her dominate the floor and that she is the main speaker/leader of the talk.

After Susanne positions the small man figure into the module, she asks Timon if he can see the man through the window/mirror design (line 22: *'do you see him?'*). Timon looks into the window, but does not respond. Susanne adds an

‘increment’(Schegloff, 1996) in line 23 (***in the mirror***), extending her prior utterance because she does not receive a response from Timon that he sees what he wants him to see in the module. When he still does not respond, Tina and Diana say in lines 24 and 25 (***if you again look through this little hole***), pointing and showing Timon where on the module he has to look to experience what Susanne is wanting him to experience. They say this on the level of the model, as ***this little hole*** refers to the hole in a cardboard part of the box instead of a window in the imagined wooden or brick wall of the space they are imagining. The way they say it is with slight overlap, and the way Diana repeats some exact words Tina says, show that they say this instruction in shared agreement.

In lines 27 – 34, Susanne is showing different ways to combine the modules with each other, and what affordances they provide in different settings. She is drawing the boys’ attention to various ways in which they can combine the boxes. The combination has to work as an actual space, which the children could imagine using in real life, and can test-use it using mini human figurines. It is only when the little figurine enters the cardboard box, the box becomes an imagined space. It is the link between imagined world of a space that could be if it was bigger (as big as if the figurine was a full sized person) and the physical world of the model or module.

When Susanne is demonstrating the use of boxes as ‘imagined’ spaces, she pauses after each description. However, her gestures keep on doing the demonstration activity. The fact that nobody interrupts her within those pauses, although those would be the moments in time when other speakers could comment or enter their own thoughts or questions, shows that they understand the demonstration phase is still in progress and that despite the pauses, she has not yet completed her turn.

Susanne uses reported speech in line 24 to accompany her action of moving a figurine through the module, (line 32: ***ok I’ll crawl in here***) by adding a level of imagined real space to the level of the box module. Reported speech makes the material action and gesture more real and experiential, and fits within the ‘pretend play’ scenario of her moving the figurine through the module as if they were crawling. She brings in the notion of scale into this demonstration without even mentioning scale, as she shows that an adult person would not fit in this module if turned onto its side.

As Susanne manipulates the materials, she says out loud what she is doing (lines 28-30: ***'this is one building element that we have, here we have the same [one] twice, one can put them on top of each other'***). It is one way of talking about the objects that focuses the children's' attention on the elements and the type of affordances that the designer wants them to notice about them. This is a frequently recurring phenomenon throughout the data – a strong relationship between the designers' talk and their manipulation of objects and affordances of these objects. She is not talking about objects in random ways. She does so in a way that is drawing attention to the object in specific ways.

This relates to her doing a demonstration, a relationship between the talk and the physical part – manipulating objects and showing actions. How Susanne handles the talk and physical objects together is an important part of the demonstration, as only listening to her words would not make much sense. Yet at the same time it is important to her for her actions to be verbally denoted as well, so the children can focus on one aspect of what she is doing with her actions (e.g. in line 30, where she places two elements on top of each other in two different ways). It is a clear example of the relationship between what the architect says and objects they use to demonstrate specific features of space, that are relevant for the children in the immediate situation.

Reporting what one is doing at the moment they are doing it, or thinking aloud whilst performing an action, is similar to what is in Conversation Analysis literature referred to as 'online commentary' (Heritage and Stivers, 1999), or talking out loud about the course of performed actions whilst doing them.

Metaphorically speaking, the above discussed example shows the importance of introducing the 'words' and 'letters' of a space writing language, before using them to form 'sentences' or newly created spatial designs. Learning the 'correct' meaning of all the elements is considered important to precede the actual design phase – combining them together into spatial designs.

London: 'Joystick'

Just before the following transcript, Salman realises that the rope in the swing he made is too short, making the swing too high up in the air in the context of the model space. Cailey immediately comes up with an idea to introduce a

mechanism for raising and lowering the real swing in the playground, which she denotes with an abstract element of a joystick that will in real life be used to raise and lower the swing. As soon as they propose to Barbara that they should have a swing which is very high up in the air which can be lowered and raised with the use of a joystick, she does not take the abstract idea of lifting and lowering the swing any further in the design process. Instead she recognises it as children's solution to an underlying problem with the model building material – a rope that is too short. She proposes a pragmatic solution of the whole structure being located lower in real life than in the model. By fixing it lower on the model, she changes the reality from abstract to concrete, rejecting the abstract idea of lowering and raising that the children proposed.

EXAMPLE 5: 'JOYSTICK'



- 1 Cai: there could be something
 2 ((cutting a straw))
 3 that (.) you could crank around
 4 ((winding up the straw in
 circular movements))
 5 to make it go up and higher and
 lower
 6 Sal: yeah (.) like a:: (.) lever (.)
 joystick=
 7



((winding up the straw in circular movements))

8 ((Barbara approaches))
 9
 10 Bar: =oh that looks really good
 11
 12 Sal: I feel we should make a joystick
 to make it go up and down up and
 down
 ((up/down gesture))
 13
 14 Bar: ha::h
 15
 16 Cai: so like if you've got to get on
 there (0.5) if you want to get
 [on it]
 17
 18 Bar: [oh you] think you're worried
 that it's too hi:gh but (but
 such an idea is help) this
 structure's coming down and then
 the swing would be at the right
 height (because it will come
 down a little bit) (.) and then
 the swing is at the right height
 19
 20 Sal: but this will get down then
 21
 22 Bar: (0.5) yeah we have to () just
 fix it back (3)
 23
 24 Cai: ((placing the joystick))
 25
 26 ((Cailey and Barbara leave the
 table, Salman starts to work on
 a new element))



((up/down gesture))



((placing the joystick))

This example illustrates how reading models differs and is co-constructed through multi-modal interactions. It consists of doing and making (line 2: cutting a straw), talk accompanied by manipulating objects (lines 1, 3 and 4 simultaneously: **'something that you could crank around' ((winding up the straw in circular movements))** – see photo in the transcript) and talk accompanied by gestures denoting movement of objects in the context of the model (line 12: **'to make it go up and down up and down' ((up/down gesture))** – see photo in the transcript). This variety illustrates the unique nature of these interactions - they elicit showing, doing and making, rather than just talking.

As a response to a discussion that happens just before the extract, Cailey proposes an idea in lines 1-5: ***‘there could be something ((cutting a straw)) that you could crank around ((winding up the straw in circular movement)) to make it go up and higher and lower’***. In line 6 (***‘yeah like a lever, joystick’***), Salman agrees with Cailey’s idea, and gives it a name.

As in many other examples, Barbara then approaches the table with a positive assessment in line 10 (***‘oh that looks really good’***), which Salman understands as elicitation of information in the style of ‘what is this in your design’, as shown in other examples. He explains the abstract concept of raising and lowering the swing with a joystick, accompanied with a gesture moving the swing on the model (line 12: ***‘to make it go up and down up and down’ ((up/down gesture))*** – see photo in the transcript). Barbara responds with a short laughter in line 14, which is different from her responses in examples where she is accepting the idea or taking it further (e.g. Example 3). After Cailey offers more explanation of their idea in line 16 (***‘so like if you’ve got to get on it’***) and showing on the model of the swing, Barbara understands that there is an underlying problem with the model building material (rope is too short), so the children built a solution in the abstract world of the playground design. She identifies the problem in line 18 (***‘you’re worried that it’s too high’***) even though the children did not express the problem – they were offering a design proposal of the joystick and a swing that goes up and down.

By proposing a more economic and viable solution in line 18 (***‘this structure’s coming down and then the swing would be at the right height’***), Barbara’s choice may reflect she is adopting a role of a ‘professional,’ proposing the concept according to her knowledge, experience and values. Although Cailey does not produce any verbal turns throughout lines 17-26, she is present in the conversation with her model making gestures – constructing the lever/joystick that she proposed in lines 1-5.

Despite the fact that Barbara closes the sequence in line 22 (***‘yeah we have to just fix it back’***), Cailey still positions her lever on the model in line 24: ***‘((Cailey fixes the pink lever/joystick with playdough on the wall next to the swing))’*** after the sequence is closed. She does not follow her action with any explanation, and both Barbara and herself then leave the table in line 26.

Cologne: 'Entrance roof'

This example from Cologne shows Susanne transforming the little model that Timon had just built – a box with a sponge roof – by reading it as an entrance roof as shield from rain. This response from Susanne arises after Timon tries cutting the sponge as it does not have the same dimensions as the box he is trying to fit it in, however this oversized, overhanging sponge then becomes a key element of an imagined space on its own – a shield from rain, a point at which Timon's mother Diana adds her own imagination to the narrative. So in summary, the child raises a problem with using the materiality of the model for writing the desired space, then architect transforms it by suggesting to look at the model in different way.

EXAMPLE 6: 'ENTRANCE ROOF'



- 1 Sus: Ok (.) wo kommst du rein (.) hier↑
Ok (.) where do you come in (.) here↑

((inspecting the module, pointing))



((inspecting the module, pointing))

- 2 Tim: ja (2)
yes (2)

((inspecting the module, pointing))



((inspecting the module, pointing))

- 3 Sus: ((keeps gaze at the module))
- 4 Zuz: >müsst du dann einfach (ausschlagen)<
>Then you must simply (knock it out)<
- 5 Tim: (2)
((fixing the entrance roof))
- 6 Sus: also jetzt >ham ma< das Dach genau
so now >we've got< the roof right

(2)

((reaches with left hand))
- 7 Tim: (4)
((fixing the entrance roof))
- 8 °a::ch° (3)
°a::h° (3)
- 9 ((moving/squishing the roof, it falls in,
fixing it))
- 10 Zuz: ((reaches to hold the sponge))
- 11 Sus: ((stands up, rearranges her camera so she can
intervene freely))
- 12 °ach° das Dach willst du da
°oh° the roof you want there
- 13 das kannst du aber so reinheben
you can pick it up like this
- 14 ((picks it up, places it in))
- 15 Tim: ((keeps fitting sponge/roof))

°aber [grö::ß] ist (1) °°größer°°
°but is la::rge° (1) °°large°° (2)

((scissoring gesture))
- 16 Sus: °das ist nicht so schlimm wenn es über geht°
°it's not so bad that this hangs over°

((points to sponge, gazes from aside))

((keeps gaze at
the module))

((fixing the
entrance roof))

((moving/squishi
ng the roof, it
falls in, fixing
it))

((scissoring
gesture))


17 Tim: ((looking at the table with materials))

18 Sus: sondern wie ein Eingang (0.5) ↑oder
just like an entrance (0.5) ↑no

wenn es regnet hahaha
when it rains hahaha

((looks at Tim))
((points at entrance))

19 Tim: ((inspecting the element from the side))

20 Dia: ja sieht wie ein Vordach
yes looks like an entrance roof

wo Mama ist ausgegangen
where mum has gone out

21 Sus: ((laughs, looks at Diana))

22 Mar: ((looks at Sus and Diana))

23 Tim: ((looks at his mother from the side))

24 Sus: heh Genau (2.0)
heh exactly (2.0)

so do we have ↑wh:at else (0.5)
so hammal noch ↑wa:s (0.5)

that we ↓want
was wir ↓wollen

((hand searching for other elements))

25 Tim: ((looking at elements, touching glue squares))

26 Sus: oder ist es jetzt schon (.)
or is this it now (.)

wir haben noch ein Spiegelement da
we have another mirror element there

((picks up a staircase and puts it back))

27 Tim: ((looks at elements in SH's direction))

28 Mar: ((turns around))



In line 1, Susanne asks Timon a specific question related to his design: '**where do you come in, here?**', to which she gets a positive reply from Timon in line 2 ('**yes**'). Although Susanne does not respond immediately, her body position and looking at the model indicate that she is still involved in this sequence and that the answer did not close the deal for her. In line 6 ('**so now we've got the roof right?**'), she is still reading Timon's design, trying to make sense of what he has

been building, and eliciting his view of the idea behind it. She continues within the same sequence of inquiry, by negotiating what the meaning of Timon's model space is, and how it can be read. This sequence continues all the way until the end of the example in line 26, where Susanne opens a new sequence (**'do we have anything else that we want'**).

Looking closely at the events that unfold in this sequence, there are many instances of Timon responding mostly gesturally and by using his model (lines 2, 5, 7, 9, 15, 25) while Susanne accompanies her comments by pointing to the relevant locations in the model as well as moving individual elements within the model (lines 1, 14, 18, 24, 26).

Throughout this example, there are instances showing how gestures are accompanied with words, denoting the object that is being referred to by gestures. Observing some characteristics of talk in relation to objects and physical actions connected to the manipulation of the objects, the speakers use location 'indexicals' (line 1: **'here'**, line 12: **'there'**) and object indexicals (line 16: **'this'**) to denote something that is being accompanied by a pointing or a moving gesture. The use of indexicals in the talk highlight the fact that this talk is being held about objects and what the architect is achieving with combining talk, gestures and objects, is that they are trying to get the children to focus on the objects in a specific way (Berger, 2008).

One of the ways in which 'indexicality' functions is that these expressions are open enough for the interlocutor to introduce a different interpretation of what is said or written in the previous turn, which may act as expanding options and opening possibilities of imagining what spaces these un-labelled objects might be.

The spatial literacy negotiations that take place following Susanne's initial third turn in line 6 (**'so now we've got the roof right?'**) regarding the reading and writing of the imagined roof, written by the sponge, reflect that the architect is not expanding the child's idea of shortening the roof any further, but changes his focus to another idea, encouraging him to see it in another way – as an overhanging, front porch rain roof. She affiliates with another adult person at the table, Timon's mother, and they join in writing Timon's space as a front entrance that has actual real-life value as a spatial feature. Note how this space is being written on an imaginary level, which is not related to the restaurant space design,

which is something that is located indoors and hence does not need shielding from rain.

This example clearly illustrates a dynamic interplay between imagined space and how it is written by gestures and model building materials. It shows how materiality of the model is the space where the majority of spatial literacy is being negotiated. The designers construct their talk and gestures in a way that makes children experience or read something about space, in a way relevant for the case. By drawing the children's attention to some specific aspects of the object, the designers are aligning with what would make things work for them in the context of the eventual aim of the workshop.

Ljubljana: 'Mysterious hedge'

To further illustrate some patterns of interaction shown by the examples from Cologne and London, the following example from the Ljubljana case study is analysed in a similar manner. Despite the analytical focus on auto-ethnography and my dual designer/researcher role in the Slovenian case study, some of the data is suitable for CA analysis. This data was produced through video medium as part of the design method and it records the design conversations between me and the children. Because the video medium is here used as an integral part of the design method of reading and writing space, this footage recorded a slightly different type of interaction between children and designers to that recorded by the researchers' cameras in the first and the third case study. In the Ljubljana case, the reading and writing of spaces occurs in front of the camera as if it is being enacted for future viewing – hence the dialogue and interactions about space are directed at and focused on the camera.

The video recording is made as part of the collaborative design process, and is here analysed in a similar way to the other examples in this section. The difference is that I am one of the speakers, so the analysis is in some ways influenced by my own interpretations and experiences of talk-in-interaction with the children. In the auto-ethnographic section of the same case study (6.3 Ljubljana: 'Re-imagining the school grounds'), I reflect on how I experience and co-create the children's reading and writing of space, from the point of view of being an interlocutor.

The following example illustrates a naturally occurring conversation between me and two girls, Anja and Lina, recorded by hand-held video cameras. It demonstrates how imagined and actual spaces are interwoven through conversation, and how the imagined structures are enacted with gestures and words in the actual space of the school open spaces. We enter the imagined created space together, and read and write in it individually, in a co-creative dialogue. We are located in the school playground, on a sun-exposed grassy mound, where the children have marked with duct-tape the edges of an 'underground swimming pool with a slide' that they wanted to create there. Anja starts imagining the pool being surrounded by bushes to make it more 'mysterious', and then Barbara expands that idea into planting a hedge as part of the entrance into the swimming pool.

EXAMPLE 7: 'MYSTERIOUS HEDGE'



- 1 Anj: kaj pa če bi bli
what if would were
what if there would be¹⁷
- 2 tuki tko okrog <grmčki> (.)
here like around <bushes> (.)
bushes around here

(runs along the duct tape shape
on the ground))
- 3 da bi šel skoz <grmčke> (.)
to would go through <bushes> (.)
so that one could go through the bushes
- 4 pa bi blo tko <skrivnostno>
and would be like <mysterious>
and it would be like mysterious

(swinging arms movement))
- 5 Maš: to bi blo še boljš
that would be even better
that would be even better
- 6 dej pokaž kje [bi bli-]
go on show where [would be-]
show us where they would be
- 7 Lin: [ŽIVA MEJA]
[HEDGE]
a hedge
- 8 [ŽIVA MEJA]
[HEDGE]
a hedge
- 9 Anj: [živa me:ja] ki bi
[he:dge] which would
a hedge which would
- 10 mela tko vra::ta=
have like doo::r=
have like a door

(gesticulating opening a door))



¹⁷ Transcription is in this case done in a three line layout, as suggested by Gumperz and Berenz (1993). The first line is a transcription in the original language, in this case Slovene, followed by the morpheme second line, which is a literal, word-by-word translation of the first line. Because Slovene and English languages differ in sentence structure, the literal translation often does not convey the meaning to the English-spoken reader. Hence, the third line is added, where the translation of the utterance in the first line focuses on the meaning and message that the speaker was conveying. The third line was omitted in German examples, as the literal translation was adequate to convey the meaning of the utterances. The third line translation is intertwined with the translator's (in this case, my own) knowledge and familiarity with the situation, and is certainly open to discussion.

- 11 Maš: =ja↑
=yes↑
yes
- 12 Anj: ki jih sploh nebi videl pa
which at all wouldn't see and
that would not be seen at all and
- 13 bi šel skozi vrata (0.5)
would go through door (0.5)
one could go through the door

((enacting opening and stepping
through the door)) →



- 14 pa bi bil pol tko (0.5)
and would be then like (0.5)
and there would like

- 15 bi bla luknja (.)
would be hole (.)
would be a hole

((swinging up-down hand motion)) →



- 16 in bi ti tko spodrsnil
and would you like slip
and one would like slip

((jumps forward)) →



- 17 po toboganu dol
on the slide down
down the slide

((jump continued into circular
hand movement)) →



- 18 Maš: in pol bi čez živo mejo
and then would through hedge
so then one would get through the hedge

- 19 že šel takoj na tobogan
already go immediately on slide
straight onto the slide

- 20 Anj: [ja tko-]
[yes like-]
yes like

- 21 Lin: [ja] pa živa meja bi
[yes] and the hedge would
yes and the hedge would

- 22 mela [tko-]
have [like-]
have like
- 23 Maš: [pol] sploh vrat neb rabu
[then] at all door needn't
then you wouldn't need the door at all
- 24 Lin: [ja-]
[yes-]
yes
- 25 Anj: [ja tko da-]
[yes so that-]
yes so that
- 26 Lin: [pa živa meja] bi mela še
[and the hedge] would have also
and the hedge would also have
- 27 iz žive meje vrata (0.5)
out of hedge door (0.5)
a door made of hedge

((linear hand gesture)) →
- 28 Anj: ja: to bi blo ful dobr
yes: that would be very good
yes that would be so cool
- 29 Maš: aja kako bi pa to deloval↑
oh yes how would that work↑
oh yes and how would that work



The designer's opening questions that consistently appear throughout the majority of all case study examples, is in this case absent from the transcribed excerpt. The key question, '**what would you like to build in your existing school playground**', served as a guiding question throughout the whole design session of this second day in the Ljubljana design process. Even though it is omitted from the above transcript, it was used to initiate the talk in interaction, and is clearly being addressed by all participants. Participant Anja's proposal/suggestion in lines 1-2 ('**what if there were bushes around here**') therefore directly relates to the formerly expressed question by the designers, and can be framed as a second turn to the designer's question. Her utterances in lines 1-2 are accompanied by body movement, as she runs along the coloured duct tape denoting the edge of the imagined underground pool. She uses arm gestures to further accentuate the location of the bushes. This is followed by further explanation of the imagined action (line 3: '**so that one could go through the bushes**') and the quality of the experience (line 4: '**and it would be like**

mysterious) of the space she is writing. Her description of the action of going **'through the bushes'** is done simultaneously with swinging both of her arms sideways, and the word **'mysterious'** is accompanied with a circular hand gesture on the side of the head. All movement is done simultaneously with speaking, however the larger, more intense movements appear to be accentuating key words like **'bushes'** and **'mysterious'**, which are uttered relatively slower and louder than surrounding words.

Anja's whole turn from lines 1-4 is framed as a question (the turn begins with **'what if'** in line 1), however, it is doing the action of Anja introducing an idea to the designer (in this case, me). That is confirmed by the way I treat her turn, I do not treat it as a question that requires an answer. I treat it in the same way the designers from Cologne and London case studies treat second turns uttered by children – I respond in line 5 with a third turn which does the action of positively evaluating Anja's second turn (**'that would be even better'**) and in line 6 I elicit further detail about her idea (**'show us where they would be'**).

The other girl, Lina, at this point utters **'a hedge'** in line 7, which overlaps with the final part of my previous turn. Her utterance is made in a loud voice, and repeated twice in quick succession (again in line 8), the second time in overlap with Anja, who repeats Lina's words **'a hedge'**. Lina does not add anything else to her turn, however Anja starts continuing her previous turn by repeating Lina's utterance, building on it further in lines 9-10 (**'which would have like a door'**). The last word **'door'** is accentuated, and accompanied by a body movement that mimics opening an imagined door (line 10). In line 11, I add an enquiring **'yes?'** which plays a role of encouragement and eliciting further information in an open way.

In the following lines 12-17, Anja continues writing space through a narrative about the door in the hedge, which would be mysterious and not easily seen from the outside, and how when one would come through it, they would unexpectedly slip on a slide that would lead to the swimming pool. The words which are uttered slower and louder in comparison to the rest of speech are in this turn accompanied by gestures and body movement. In line 13, **'door'** is again accompanied by enactment of opening and stepping through a door. In line 15, **'a hole'** is uttered simultaneously by a swinging up-down hand motion, denoting the position of the hole or the gap in the imagined hedge. The described slipping and sliding action in lines 16-17 is enacted in an almost choreographed jump

forward - accompanying the word '**slip**' in line 16, which smoothly continues into a circular hand movement in line 17: '**down the slide**'. This is another example of how a speaker reinforces the verbal act of writing space with physical movement and the use of artefacts – in this case the duct tape on the ground, depicting the size and shape of the written/imagined space. The act of writing space is in this turn done individually by Anja, and body movement helps her to hold her turn.

My response in lines 18 and 19 is a third turn response to Anja's designed/imagined space, negotiating my own understanding of her turn – in a sense, reading the imagined space that she had just written with her words and body movement. I am making sure that I read her space correctly: '**so then one would get through the hedge straight onto the slide**' and the response I get is simultaneously from both girls in lines 20-21, is a loud '**yes**'. Lina attempts to elaborate her '**yes**' further in lines 21 and 22: '**yes and the hedge would have like-**' but is in mid-sentence interrupted by me (line 23: '**then you wouldn't need the door at all**') - mostly because I did not hear her turn due to excitement and simultaneous talk from the children, and also because I was interpreting what I heard from Anja's narrative to make sure I understood correctly. The large amount of speech overlap, involving gestures and body movement, and the fact that there are four of us in the group, all contribute to the fact that allocation and changing of turns does not happen smoothly like in most everyday conversations. Turns need to be negotiated and sometimes, attempted many times. In this case, Lina goes for a second try at her turn in line 24 ('**yes-**'), however this time she is interrupted by Anja in line 25 ('**yes so that-**'). Lina this time talks over what Anja initiated to say, and completes her own turn initiated all the way back in lines 21-22. In lines 26-27 she completes the turn ('**and the hedge would also have a door made of hedge**') which is greeted by a positive evaluation from Anja (line 28: '**yes that would be so cool**'). My final turn in this example in line 29 is an initiation of further elaboration from Lina: '**oh yes and how would that work**'.

What follows after this last line, are more negotiations from all three involved children – also a boy younger than the girls, who tended to be quieter in group discussions, but who adds very elaborate descriptions when prompted individually. Many examples from case studies show that speech overlaps, interruptions and rapid exchange of short turns are common in child-designer

talk in interaction – and this example illustrates this phenomenon in detail. The speakers work out individual ways to hold the floor when writing and reading space, and mechanisms to continue after being interrupted by somebody else's talk. This is done through engaged, raised voice speech, accompanied by many gestures and body movements, closely related to the locations in the school grounds that children are referring to. Speaker roles sometimes change quickly and frequently, depending on who the holder of the attention of the others involved in the conversation is in that moment. The key identification factors of the points where speaker allocations change, are the speakers talking at the same time with raised voices and intensified gesticulations depicting the words. There are many speech overlaps, and also frequently occurring repetitions of each other's previously said things. All of these qualities of interaction help interlocutors navigate their position within the design process, and negotiate their own writing of space with other people's readings of their designs.

Summary of examples

The structure of interaction in the main body of the workshops, during the model building activities, shows some similarities in the ways it unfolds between the children and the designers. There are, however, other specific ways in which talk unfolds within this setting. Focusing on the part structure described in this section shows in detail how the 'negotiation' of spatial literacy happens in action, on a moment to moment basis, in design interaction. There are variations in the structure of these conversations, but in general there is 'three part structure' that they all follow as an unwritten rule:

1. Designers elicits children's talk by using comments or questions relating directly to the children's designs

These can vary from being extremely positive evaluations, to basic questions, encouraging and engaging, open or specific to a selected feature of the design. The designers elicit talk about what the children have been doing in relation to the design. Most common examples are the designer asking the child to read their design or part of the design to them, asking the child for their favourite place within the design, asking the child for the reasons why they wrote space like that, or simply approaching with a very open 'what is that' question.

2. Children's responses in a verbal, gestural or artefact-supported medium

This is the part where children respond to the designer's question or comment. Some of these examples are mainly verbal, and accompanied by hand or full body gestures, and manipulating modules and materials for clarification and demonstration of the words. Some examples rely mostly on doing, handling the model space materiality and produced artefacts, accompanied by gestures and less so with verbal utterances. Some utterances, however, are predominantly verbal. This part can be very brief, or it may be constructed in a larger sequence that lasts longer.

3. Designers' responses to what children have been doing or saying

The key point here is that the designer takes on board what the child had said and manipulates it in various ways. The designer always responds to a child's answer. There are no examples in the data that would show the designer simply walking away after the child presented them with an answer. However these designers' responses vary in length and focus, they can take many forms and they may open further discussions that are constructed by many turns made by different people. What they all have in common is that they are all constructed in a complex way, doing many actions at the same time. These responses are designed in a way to reflect what the child said or did, in a way that shows how the designer understood the child's words or actions, and also in a way that shows further action in some way which is relevant to what the designer wants to achieve in the session.

Due to its position, this response resembles teachers' third turn response to children in an educational context (Filipi and Wales, 2010; Margutti and Drew, 2014; Mehan, 1979; Sinclair and Coulthard, 1975). However despite this similarity in the position and the educational aspects of these design workshops, these responses are specific to the design context, with the background aim of the designer being what they want to achieve in the session. This can be seen in the way that designers do not explicitly evaluate an answer as correct or not (as teachers typically do in third turns); instead these responses are used, for example, to encourage the children to 'see things differently' and open options to other possibilities. This is the key place in these interactions, where people's 'spatial literacies' emerge, and the focus of the analysis is placed on how these

negotiations between different ways of seeing work reciprocally in a design setting – from designer to child and from child to designer.

Changing the idea into something different happens in the negotiation space, which is opened by the designer's third turn. They arrive at the idea based on the contingencies of whatever the children have done with the models and what they say about them, originating from the materiality of the model. For instance in the example 'Entrance roof', the sponge is larger than the box holding it, and not as Timon plans to write it – he requests to cut it to the right size. The designer does not take the idea any further (Susanne does not follow the idea of cutting model materials; instead she shows Timon this design can be read as a feature that appears in the real world – an entrance roof). As a solution to an underlying challenge (absence of scissors?) she proposes the most pragmatic, concrete solution of reading the model structure in a new way, as being located in real life rather than in model space.

The interaction works on several different levels at the same time. There is the physical, material level of the module that Susanne is showing the children, where the materials are touchable, moveable, adjustable and changeable in the moment. As soon as they put a small man figure into the module, the cardboard box enters into another level – they enter a parallel level of pretend play, where the box becomes a room, and the little figure represents someone they know or even themselves. There is then also the third level, which is incidentally the main reason for introducing the modules and their characteristics/affordances to the children, the level of imagining that this module is an actual space – and combine with other modules to create a place they would like to use. Children and designers constantly move within these levels, sometimes two or three of them at the same time, which adds a large amount of complexity to the conversations, and various ways of expressing which level they are talking about. For example the designers use reported speech when using models as imagined space, and adopt 'online commentary' as they demonstrate writing space.

The five examples described above however open many questions. Why are the designers expanding ideas and turning them into something else?

The first two examples are slightly different, as they can show aspects of the designer teaching the basic skills of spatial literacy. Even though they are located in the main building section of the workshop, they follow a different aim – the

designer is doing more work in introducing the ways in which to 'read and write space', rather than focusing on the contents of what the children are trying to design. The question arises, why, throughout the building session, do the designers keep revealing their values by demonstrating the ways in which space may or may not be read and written? Do the designers do so in order for children to better understand the ways in which the real world of design works, or are these behaviours a response to confronting each other's values and ideas about space, while trying to negotiate them through models? Even though the purpose of the workshop is design-based, there are some educational aspects emerging throughout the building section of the session.

Looking closely at the way in which they invite the children to take part in getting familiar with the elements, offers a glimpse into what designers assume to be relevant for the design workshop, how they perceive the children's existing spatial literacy, as well as showing us how the designers would like the children to communicate spatially with them, so the results will be most useful and understandable. The aspects of materials they choose to highlight in the introduction also show architects' approach to spatial literacy, and already start to show some spatial values. In a sense, architects are introducing a new way for the children to see, experience and think about objects and space.

The designers manipulate the activity in order to introduce a new way for the children to see, experience and think about objects and space. The designers are giving the children an opportunity to experience objects and space in ways they would not normally do, and my data suggests that it is key to use a mixture of verbal, gestural and artefact language, in order to do so. It is a form of abstract language: the act of making and manipulating objects is part of the language that allows one to read and write space¹⁸.

¹⁸ The data does not provide the key into the world of abstract concepts that are being imagined inside of the designers' and the children's minds; however it does provide a very good platform for exploring the ways in which they are communicating those concepts to each other.

6.5.3 Final prioritisation stage and the leap back to the design proposal

This last section focuses on where attention is being put, what elements and qualities are selected both by the children who wrote their final designs, and the architect when they give their feedback. After the building session is finished, the designers now have to make use of the results so they can incorporate them into the final design proposal, in a way that is useful for them. In a sense, they are already doing their designs in collaboration with the children when throughout the model building activities, as they select specific elements of the design-in-the-making, and ask children what that is, or why they chose to make it like that. These discussions and opening new themes and questions is part of the design thinking process, which leads the designers' final leap back to bringing them all together in the final proposal. As they ask children to read their own designs out loud to them, it does not produce answers, it opens many questions, and provide the designer with more creative space for further work in future. The designer puts attention on some elements and not others, highlighting and pointing out the elements they value, or prefer. The examples show how these preferences are expressed, and the ways in which the designs are talked about, showing how spatial designs are being READ, after they have been WRITTEN, or designed.

London: 'Really really lovely'

The first three examples show the final feedback section of the London workshop where everyone has stopped making the models, and Barbara lets each group present their model to the whole class. After each group's presentation, Barbara communicates her preferences among the children's designs, by using very positive, appraised 'evaluations', focusing on specific elements on the models that she prioritises and finds inspirational (Margutti and Drew, 2014; Pomerantz, 1984). She makes these 'evaluations' in front of the whole group of participants who during the workshop worked in smaller groups, so they can see other groups' work, ask questions about it, and hear Barbara's feedback.

EXAMPLE 8: BARBARA'S RESPONSE TO PAUL AND RASHID

Bar: so what I like especially about it's I love how in the shade of the tree you can sort of climb up and jump on that trampoline I think that would be really really lovely (0.5) I also really like how you've made a design on this drawing and then you developed it further but you sort of explored it when you built that model (.) and I think that was really (.) really well done (0.5) I also love all the nets I think that's very exiting (.) and the FLAG (.) I think quite a few people had flags



FIGURE 31: PAUL AND RASHID'S DESIGN

The designer's response is full of positive assessments: ***'I love how', 'really really lovely', 'I also really really like'*** and others. These are all evaluative terms, however designed in a way that makes them appraisals. Overall, she is reading out loud the spaces they designed, but emphasising the positive aspects of the qualities, activities or aspects that show what she values in their designs.

She exhibits several ways of doing positive evaluation in a place of design process, where she is giving her opinion, or feedback, on design. ***'I also love all the nets'***. This is what she selects to highlight, because she likes and values that aspect of space. Her selection process only focuses on examples she can respond positively about.

Another thing that all these positive assessments have in common is that they are not only positive assessments; they have an emotional value attached to them. Selecting words such as ***'love', 'lovely'*** and ***'like'*** as well as duplicating or emphasising words like ***'really really'***, she adds a certain emotional aspect to the way in which she reads children's spatial designs. Creation of spaces is a personal thing, and by designing children put pieces of their own identities into the spaces. Creativity can be emotional and Barbara is only selecting the examples she ***'loves'***, evaluating certain things and not others. This may be linked to what happens next, the practical implications of what is being selected and liked by Barbara, it might make it into the final design.

EXAMPLE 9: BARBARA'S RESPONSE TO POPPY AND AHMAD

Bar: I really like your idea of the snake because it's a snake so that's really exciting but it's also something to climb up something to slide down AND (0.2) a swing hanging from that snake's back (.) I think that's really (.) that's a really cool (.) the snake part



FIGURE 32: POPPY AND AHMAD'S DESIGN

This example shows more instances of Barbara's emotional appraisal of one design she reads as a '**snake**', she repeats the word multiple times, emphasising it compared to other talk, and using many positive assessment related to the '**snake**' ('**cool**', '**really exciting**'). But here she also reads the snake as part of the playspace, as it has other functions besides being a snake: '**It's also something to climb up something to slide down and a swing hanging from that snake's back**'. This way Barbara reads the design as she sees it on the model, and draws on her conversations she had with the children when snake was in the making.

EXAMPLE 10: BARBARA'S RESPONSE TO SOMAYA, CAILEY AND SALMAN

- Bar: I also love (.) I think this little corner there is really lovely
with these (.) are they calm parts where you'd like to sit you
say↑ (.) or:
Cai: (0.5) uhm (.) they are stones to climb on
Bar: they're stones to climb on I think that's like a really nice
landscape corner



FIGURE 33: SOMAYA, CAILEY AND SALMAN'S DESIGN

The final example shows Barbara's appraisal leading to a specific question about the design. Instead of the question asked verbally, Cailey's answer refers to the gesture that accompanies Barbara's question. She was asked '*where you can sit on you say?*' referring to something they had said in their description, but the question is accompanied with a gesture pointing at the stones, so Cailey says, beginning with a hesitation: '*uhm they are stones to climb on*'. It is accepted as a relevant answer, as Barbara responds to it with a typical positive assessment, first repeating the answer '*stones to climb up*' and then reading the whole corner as a technical term '*that's like a real nice landscape corner*', which is a new term for describing this part of the model in the session.

Cologne: 'Secretly-seeing-through'

In the German case study the case is slightly different, as there are no opportunities for presentations of models in front of the whole group of children. However a similar action is achieved by the designer asking children to name their constructed models, and this way Susanne has a title for each model which gives some idea of how children would like to feel in this 'world' made up of model elements.

EXAMPLE 11: 'SECRETLY-SEEING-THROUGH'

- 1 Sus: haben wir 'nen Namen für diese Welt (4.0)
 do we have a name for this world (4.0)
- 2 ((the boys look at each other and laugh))
- 3 Mar: e::::m ((taps his mouth with his finger))
- 4 Sus: ha:↑ (0.5) können >(wir denken)< etwas ein (2.5)
 ha:↑ (0.5) can we >(think of)< anything (2.5)
- 5 Tim: Spielplatzwelt↑
 playground world↑

 ((smiles and looks at Markus))
- 6 Sus: wie können wir die Welt nemmen↑
 what can we name the world↑

 ((reaching for her notebook))
- 7 Mar: Spielplatzwelt
 playground world
- 8 Sus: Spielplatzwelt↑
 playground world↑
- 9 Tim: °jo°
 °yes°
- 10 Sus: oder↑ (.) was haben wir noch↑ (.)
 or↑ (.) what else do we have↑ (.)
- 11 °Spielplatz ist ja alles° (.)°das ist 'ne besondere Welt°
 °playground can be anything° (.) this is a special world°
- 12 Tim: (4.0)
 Geheimdurchsehen
 secretlyseeingthrough
- 13 Sus: wie Geheim-↑
 how secretly-↑
- 14 Tim: [seeingthrough]
- 15 Mar: [seeingthrough]

- 16 Tim: Geheimdurchsehen
secretlyseeingtrhough
- 17 Sus: Geheimdurchsehen↑ (1.5) echt↑
secretlyseeingthrough↑ (1.5) really↑
- 18 Tim: ja
yes
- 19 Sus: wo:w
wo:w
- ((starts writing it down, smiles and looks at the camera))
- 20 Tim: aber ich weiß nicht (.) wie wir das merken sollen
but I don't know (.) how we should remember that
- 21 Sus: das shreib' ich auf (1.5) <Geheimdurchsehen>
I will write it down (1.5) <secretlyseeingthrough>
- ((says the name as writing it down))
- 22 okey super (.) danke
ok great (.) thank you

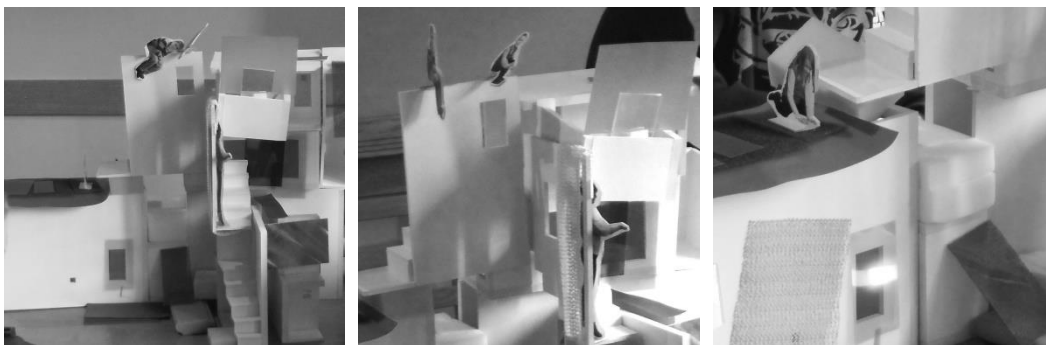


FIGURE 34: TIMON AND MARKUS' 'SECRETLY-SEEING-THROUGH' WORLD

Susanne does not immediately agree to accept the first offered name in line 5: '**playground world**'. She repeats her question in line 6: 'what **can we name the world**' after the answer has already been given. Timon's utterance is loud enough, so her repeated question is not likely to be a request for repetition due to not hearing what he said, but a sign that she sees a problem with his response. After Markus repeats the name quite assertively and in line 7, she first repeats it with increasing pitch, formed as a question (line 8: '**playgroundworld?**'), to which Timon quietly responds positively with '**yes**' in line 9. She then offers a possibility to come up with a new answer in line 10: '**or what else do we have**'.

She explains in line 11 that '**playground can be anything**', and that this is '**a special world**' so she asks them to come up with a different name. Susanne describes the world as '**special**' in line 11, which is another example of adjectives the designers use seem to be choosing to make the children feel engaged and interested in what they are doing.

To Susanne's elicitation, and after a long pause (4 seconds) Timon comes up with a new name in line 12: '**secretly-seeing-through**', saying it very softly so Susanne may not hear it the first time, as she initiates repair with '**how, secretly-?**' (line 13). After both boys repeat the name with more assertion (in lines 14 and 15, repeating the name in a raised voice and in overlap), Susanne responds with fascination (line 14: '**really? Wow**') and eventually writes it down as the final name of their design.

By asking the children to give a name to their designs, Susanne is asking the children to prioritise certain aspects of the design that are important to them. To position this within the design process, it is the children's way of having power over the future use of 'their' model, because the given name allows the designer to write it down for future reference. This way the children are in some way claiming 'ownership' to their creation, and the name gives the design an identity and makes it part of the design process.

Through the above described negotiation, Susanne effectively asks the children to instead prioritise qualities or characteristics of their designs by capturing these aspects in the title.

Summary of examples

Both examples show some kind of future-orientation from the way designers show to the children and other adults who are present at the workshop, how what they have done on the day will be carried forward into the next stages of the design process. The designers are displaying with their talk and actions, that what the children did matters to the final design, which will be done at a later time. They make it clear that they will take the children's ideas with them, and that the ideas will contribute to the final design. In both examples, children are asked to express their preferences about the model, which will be taken by the designers to the final proposal.

The mechanisms for bringing about the designers' values into discussion are however different between the two case studies. In London, Barbara openly expresses her own preferences of children's designs, after the children have chosen their own. In Cologne case study, the children are asked to name their designs by prioritising and highlighting some specific qualities of their designs in favour of others, while Susanne expresses her values by either accepting their names, or asking for a more detailed name.

The two cultures carry their own values, which are the result of thinking critically about space (Goodchild and Janelle, 2010). Critical thinking is expressed through preferences and evaluation of options: very similar to what Mackey describes as the people's choices of where to direct attention in the context of using literacies when reading and writing (Mackey, 2002). Expressing preferences alongside others involves some balancing and navigating compromises between individuals' views (Barton and Tusting, 2005). The roles participants play in interaction may imply the level of power that individuals bring into negotiation. Dovey distinguishes between two types of power: the 'power to' do something, and the 'power over' something (Dovey, 2008) and the interplay of both is important to take into consideration when discussing any form of negotiation. The different theories and models of the degrees of 'power to' has been critically examined in the context of children's participation by Patsarika, who found that this complex issue involves different 'interpretations, contingencies, protocols, organisational structures and the multi-layered adult-child dynamics' (Patsarika, 2011, pp. 180–181).

This section helped reveal some structures of talk that take place in interactions between children and designers through granular analysis of short excerpts of video recorded data. On its own, this analytical approach shows individual, sometimes seemingly unrelated aspects of the use of talk-in-interaction. However, combined with the thick description of design session from previous sections, this analysis is given a rich and detailed context. By applying a theoretical framework of 'spatial literacies,' the findings from both analytical approaches are now ready to be discussed in the following chapter.

7. Key findings: tracing spatial literacies across case studies

So far this thesis has explored the key research question: ‘How are spatial literacies manifested and negotiated in interaction between children and designers engaged in spatial design?’ through documenting and analysing a detailed account of talk in interaction in three case studies.

Throughout the three case studies, the designers were observed to use their talk, gestures and materials to achieve the following key categories of actions:

- Engaging the children and eliciting their participation by making the process relevant, child-appropriate, personalised, and by making children feel valued.
- Creating conditions for children to see and experience space in new ways. Demonstrating and letting children experience the relevant skills and knowledge.
- Inviting and encouraging children to explore and express their spatial ideas and priorities through reading and writing space.
- Engaging children in a creative exchange of interpretations of the designed space representations
- Helping children develop the technical skills of model making

In a narrative form, I discuss and interpret these actions as key findings, by relating them to the theoretical framework of ‘spatial literacies’. I focus on how ‘spatial literacies’ can help me explore and interpret the interrelationship of literature and data.

7.1 Learning from each other

The two cultures of children and spatial designers meet and interact within collaborative creative design workshops. This creates possibilities for both sides to learn from each other and build individual literacies in the process. The reciprocity of communication in the design process brings together different imaginations and ways of seeing the world: different literacies.

The theme of reciprocal learning emerged from all three case studies and is here explored through the lens of the theoretical framework of spatial literacies.

7.1.1 Demonstrating skills for reading and writing space through the use of material artefacts

The main body of design sessions – the building activities – show some aspects aimed at children learning something new. The ways in which the designer shows specific qualities of the model making materials to the children, shows they are creating conditions to experience space in a certain way. They demonstrate some specific aspects of the material artefacts to the children by letting them experience ways in which to read and write these artefacts and the spatial qualities they represent. This aspect is important for the children to be able to participate fully, to be on the same page as the architects in the sense of communicating space. In a sense they are creating a small proto-community as described by Willis (1990) for the communication needs of the workshop.

The designers focus on specific aspects of the material artefacts for the children to experience in a certain way (for instance in Example 4 the mirroring quality of the module box). A detailed analysis shows the designers use their talk, gestures and the manipulation of models in an almost choreographed way to demonstrate the way in which they ‘read’ this element and encourage the children to do the same. It is in these moments that the designers’ spatial literacy is being manifest, and the children are not yet asked to manifest their own.

Susanne creates the conditions for the children to experience a key feature of a module. She demonstrates the feature, however when she is unsuccessful in achieving that, she does not mind other children explaining the feature to each other. She does hold the floor, but the aim of understanding the feature is key,

not the fact that she taught them it. There are many examples of Susanne's talk which show that the children did not understand what she is showing them, in the way that she intends them to experience it.

7.1.2 Negotiating literacies: seeing things differently

While children are engaged in making and doing, building and combining, drawing and talking, the architects tend to keep a more 'background' role, not intervening in the building process too much.

The majority of interactions between children and designers in this stage can be described with a 'three part structure' (described in detail in subchapter '6.5.2 The building activity: design talk in interaction'). They approach the children with questions about their designs, and children answer with descriptions and gestures. The impact of the designers' responses that follow is reciprocal discussion and negotiation of individual spatial literacies. The purpose of the designers' questions may be to get some answers from the children that they can later use in their own designs. But by discussing the children's answers, they effectively enter in a process of negotiation between different understandings of how space is 'read and written'.

Through the lens of spatial literacies, these negotiations resemble a confrontation of what Gladwell describes as 'expert intuition', 'thin slicing' and 'slow motion' perception of something so well known to somebody (Gladwell, 2006). By being an expert in a specific domain, one begins to shape a specific literacy developed through intuition – how one reads and writes a specific situation. In context of design expertise, Dorst and Lawson describe this as the concept of 'design patterns' developed throughout a designer's life (2009). My data suggests that the ways in which one reads and writes space, whether affected by 'expert intuition' or 'design patterns', are unique on both sides of the interlocutors. 'Expert intuition' affects the spatial literacies of the children, which are in return negotiated from the side of the 'expertise' of the designers, and vice versa.

The observed interactions can also be framed within institutional talk between the 'experts' and 'novices', which affects participants' roles and the ways in which the interaction is structured (Drew and Heritage, 1992). In the introductory parts of my data, the designers show instances of adopting the role of 'experts' in the

way that they hold the floor, organise activities and structure the nature of interaction. However during the building activity, through asking children questions about their own designs, these roles seem reversed – the designer becomes the ‘novice’ eliciting the ‘expert’ views of the child (Ibid.). In a similar manner, Goodwin suggests that experts develop some sort of ‘professional vision’ (1994) which allows them to see and read certain things in situations where novices or lay people would not see them. The negotiation of spatial literacies in my data can also be described as an interplay and negotiation of such ‘professional visions’ of children and designers. Designer’s ‘vision’ as a specific form of literacy informed by years of practice, while children possess the skills of reading and writing the material world in a certain way, specific to them.

7.1.3 Tension between how much literacy is preferred and how large the existing pool of knowledge about space should be

Designer’s responses do various interesting things when they respond to the child’s explanation of their designs. The designers may transform, expand, or open the idea, turning it into something else completely. It is in this position that the designers bring their own views after taking on board the child’s explanation, and it therefore provides the key position where the two cultures of designers and children come together, collide, mix and create something new.

Taking into account the intentions of the architects, what they aspire to talk about and see children do in terms of design, opens up many new questions. Starting with, what is the key value that drives designers to select which ideas to pursue further and which ones to transform into another direction? What do they consider as ‘normal’ or ‘normative’ to start with, what is considered as expected values of supposedly average spatial users (of any age), which designers are looking for deviance from? And where do they draw the line? Where is that ‘wackiness’ actually no longer an ‘acceptable’ departure from normal or non-original, and what are the reasons why this cannot be accepted? What supports innovation and what is treated as just a bit too far off?

Data analysis explored how ‘new ideas: something that’s a bit wackier, wild and comes from their soul’ (Kaucky, 2014), were communicated. The prevailing theme emerging from all data was the tension between how much literacy is preferred and how large the existing pool of knowledge about space should be.

The process of negotiating spatial values showed this tension in the sense of what is acceptable as original and wacky, and the process of negotiating literacies showed the tension of what designers preferred to see in their participants.

Lack of fluency in spatial literacy is considered as encouraging creativity – for example Barbara uses media unknown to participants in order for them to get rid of control and enter an abstract, unknown terrain for discussion. Susanne's approach of 'spatial atmospheres' releases the participant of all preconceptions and allows them to express the way they would like to feel like in a new space, using an abstract medium. Similarly in the Slovenian case study, we used video medium to allow the children to start creating their narratives with a blank, clean slate, and create their own approaches through the process.

Prior knowledge of participants is seen as an obstacle both by Susanne and Barbara, who do not want the children to refer to the places they would normally use and would have experiences with. Yet a shared 'point of reference' or a common theme is considered important when starting design. Barbara shares some knowledge about precedent designs with the children during her first introduction, and Susanne tells a story about the 'Land of milk and honey' which guides children's imagination in the first design workshop. Some shared knowledge is valued for a starting point of interaction.

7.2 The material realm as the medium for expressing spatial literacies

Throughout three case studies I observe how materials not only encourage, but also facilitate and bring their own agency into design interactions. In this context, individuals' spatial literacies, or the ways in which the materials are read and written, support communication.

The process of using the material realm to express and examine spatial design ideas can be compared to what Kolko describes as 'one of the basic principles of making meaning in design' (Kolko, 2010, p. 19). By making data 'tangible', by moving them into the 'physical realm' to free both the designer as well as the 'data', of 'memory limitations of the brain' (Ibid., p.19):

'By taking the data out of the cognitive realm (the head), removing it from the digital realm (the computer), and making it tangible in the physical realm in one cohesive visual structure (the wall), the designer is freed of the natural memory limitations of the brain and the artificial organizational limitations of technology. Content can now be freely moved and manipulated, and the entire set of data can be seen at one time.'

(Kolko, 2010, p. 19)

By deconstructing the Cologne restaurant design proposal into individual elements, 'implicit and hidden meanings are uncovered by relating otherwise discrete chunks of data to one another' (Kolko, 2010, p. 19). Entering the tacit sphere of model construction, the model elements are left freely to be combined by children into a new model. Approaching design with a fresh mind, free of context and constraints, may lead to opening new possibilities, and finding connections which would not be possible when bound within a specific context.

7.2.1 ‘Material’ or ‘non-human’ agency

The physical qualities of materials play a large role in communication between children and designers. In the most basic form, they affect how the design structures are constructed to convey meaning.

Drawing on authors studying material culture from a semiotic perspective, I see in a new light how the models used in my data are used to co-create meaning. Carey and Malafouris argue that objects, physical artefacts and materials possess a rich agency to transmit meaning (2013). Used as ‘icons’ (Peirce, 2007, p.177), materials are shaped to resemble some features of the space they are representing, and used in combination with other materials to construct a model. The models serve as conveyors of meaning, they facilitate the understanding of the location, scale and situatedness in the real world. When interpreted, or ‘read’ by another person using their own literacy, they also provide context-free considerations about space, which open up new, unpredictable possibilities about spatial design. The models provide a space for negotiating views, and help create shared understandings as a medium for communication (Carey, 2007; Malafouris, 2013).

But the materials in fact bring to the design process more than just the agency to transmit meaning in communication. New inventions happen ‘by accident’ because the materials used in model building possess a certain quality. For example realising it is hard to build a tree-house structure out of sticks, so it became a cave-shaped den made of dough. Or the elements become giant sized in real life scale because a snake-shaped slide is made of playdough according to what was still manageable by child’s hands without it tearing in two. In both examples, the physical qualities of the model building materials influence how the model is constructed. At the same time however, a change happens in the abstract concept of design, the spatial feature (a cave-shaped den or a giant snake slide) that the model is representing. The materials adopt a ‘non-human agency’ and they act as ‘agents’ (Jones and Cloke, 2008) in how the design thinking is shaped, and bring unexpected outcomes that depend on the material qualities of the model. In social science, ‘agents’ are still mostly understood as ‘humans who bring change with their actions’ (Ibid.). However there is a growing body of research focusing on material ‘agency and material ‘engagement’ through the ‘symbiotic relationships’ that engagement of humans and materials bring to

human action (Harper et al., 2008; Ingold, 2000; Jones and Cloke, 2008; Malafouris, 2013, 2008; Miller, 2009; Nevile et al., 2014). After analysing my data, I can also argue that materials also add a strong agency to shaping people's spatial literacies; the ways in which materials are read and used for writing spaces and spatial representations.

7.2.2 'Intersubjectivity' as a joint action achieved through the use of materials

Using models to 'write and read spaces' is not a solitary action, it requires an interlocutor who can read one's written space and respond with their own writing. In Example 5, the intersubjectivity of the model is being co-created and negotiated through talk, gestures and the use of materials (Salman is measuring the size of the swing's ropes against the wall and realising it is too high, while Cailey immediately starts producing an addition to that design – a playdough joystick that will solve the problem of the swing being too high up – and describing it as she is modifying the model). By modifying and co-creating the model, the children's intersubjectivity is also being modified and co-created, and so are their spatial literacies.

Clark argues that language use is the joint action that emerges when speakers and listeners, or writers and readers perform their individual actions in coordination (1996). These 'actions in coordination' may be seen in the light of 'intersubjectivity,' as Gillespie and Cornish suggest, which refers to 'the variety of possible relations between people's perspectives' of an idea or an object (2010, p.19). Coelho and Figueiredo argue that intersubjectivity is often embodied, implicit, or even 'automatic' in relation to interlocutors (2003). The ways in which participants in my data use artefacts in interactional situations and how they are negotiating shared meaning through demonstrating a point with materials, can be described by the interactional and performative nature of intersubjectivity as argued by researchers from the field of CA and ethnomethodology (Garfinkel, 1991; Schegloff, 1992).

The intersubjectivity in design also creates a shared, 'third' space, or a 'third mind' (Burroughs and Gysin, 1979), where through negotiation the new, and the unexpected things can happen. This 'thirdness' creates a shared identity within the group (Barton and Tusting, 2005). Barton and Tusting argue that mutual

construction of the 'sharedness' happens between the agency and structure of interaction (Ibid.) – in the space between what people can do freely, unexpectedly and through improvisation, and what is planned, acceptable and valued by the social environment (Miller and Dollard, 1949).

The first rule of the 'improv theatre,' is to always say 'yes, and ...', and then add new information (Frost and Yarrow, 2015; Johnstone, 2014; Salinsky and Frances-White, 2008). Always agreeing and accepting what is said before you in the shared theatre space, and contributing something of your own, moves the scene forward in an unpredictable, fresh new way (Johnstone, 2014). This approach is similar to ethnographic research, Cerwonka and Malkki argue, where the ways of knowing are discovered in the 'give and take of real life, in all its unpredictability and immediacy' (Cerwonka and Malkki, 2007). The unpredictability that opens up new possibilities, is often mentioned in industrial design (Frye, 2017) and architecture (Jencks and Silver, 1972), where the creative and productive aspects of improvisation are considered as key to design. With negotiation comes 'sharedness' and 'sharedness' brings improvisation, 'newness' and creativity to the design process.

Going back to what Barton and Tusting argue is the other side of the 'sharedness' coin, the 'structure of interaction' (2005) can be described by Goffman's notion of 'participation framework' (1981). The notion of 'participation framework' suggests that when a group people engages in interaction, individuals will adopt and play certain roles (Goffman, 1981). As soon as a person speaks within the group, they are not addressing a formless, shapeless mass of people – the group becomes a 'circle' within which every individual person holds a specific participation status (Ibid.). A structure of interaction is established whether it is pre-assumed by institutional rules (Heritage, 2004b) or it forms through 'participation framework' as discussed by Goffman (1981).

7.3 **Model space, imagined space, designed space**

A striking similarity across case studies is the way in which the subject of the conversations switches between layers of reality and imagination. This phenomenon occurs whether it is children talking amongst each other, or children talking with the designers – as long as they are involved in the activities involving ‘reading and writing’ space, no matter what method or medium they are using. The analysed examples in subchapter ‘6.5.2 The building activity: Design talk in interaction’ illustrate this phenomenon in detail, focusing on some specific aspects of how the talk regarding each of these layers is being constructed in the moment of interaction.

7.3.1 **Layering talk**

The layer of **model space** is the world of the materials laid out in front of the children, and it relates to the physicality of the objects and to the actions of manipulating them into something new. In two case studies that took place in Cologne and London, the model building activity is the key communication method between children and designers, and the material challenges of building, cutting, sticking, fixing, mounting tying and many others, arise in conversations very frequently. This is the basic layer in which the gestures and materials come together very tightly with what is being said – describing the modifications of objects as well as talking about the location of the object to be modified, is always accompanied by some sort of body movement that helps further explain the talk. In fact in some cases, talk is reduced to the bare minimum, or in many examples even omitted, as participants do and show instead of describing it. The struggle for finding the right terminology (see Example 3: ‘Periscope’) is based on descriptive talk, accompanied by gestures and referring to the place in the model where the description becomes relevant.

Very often, the small human-shaped figurine enters the model, or alternatively, the participants start using their hand gestures as though they are moving through the space of the model, using the little elements they designed as a person would do (running up and down the model stairs with fingers, lying down on a large swing using a hand). It is in such moments of ‘using the model space’,

that the model space becomes something more, it becomes the layer of the **imagined space**, as if this was a real playground or room, and the children pretend to be inside of it, playing with the equipment as they would if it was real. The ‘imagined real life space’ appears to be in constant interplay with the model space, because there are actual material concerns that constantly arise: the glue needs to be re-applied for the small foil to stay on the hole in the cardboard wall, or else the imagined space will lose its window; or the snake-shaped piece of playdough has to be reinforced with a twig, or else the snake-shaped slide in the playground will not stay upright.

The layer of **designed space** is talked about as soon as the ‘model space’ and its attached ‘imagined space’ are put in the context of the fact that this is something that might be built for real. The layer of ‘designed space’ brings along with it the constraints of the real world: i.e. the financial, practical, functional, spatial and many other factors that will affect whether the proposed ‘imagined space’ can or cannot be built as part of the final design. In other words, a ‘cardboard box with a playdough snake’ inside of it, in this case the ‘playground with a snake-shaped slide’, might exceed the existing budget, or there is not enough space available, or it simply will not fit within the overall final design.

Shifting between different functions of talk as can be compared to Merrills’ ‘model of layering talk’ (2009), which he proposed to help speech therapists be more aware of the layer they are talking about in a given moment. He argues that misunderstandings arising through interlocutors talking on different layers in the same conversation, can be better understood if ‘layers’ are identified and taken into account (Merrills, 2009). My data shows some instances of such ‘misunderstandings caused by layering’, however they are dealt with by being taken forward to new ideas. For example in Example 6 from Cologne, the child talks on the layer of the ‘model space’ world: a sponge is too long to fit within a box, so he expresses a wish to cut it shorter. The response of the designer is on the level of the ‘imagined space’: she likes the idea of a front roof hanging over the entrance to protect people from the rain.

The fascinating interplay of the above described layers of conversation happens spontaneously, which is reflected in the fact that the participants never announce the layer which is the context for what they are saying at the moment. Children and designers use their spatial literacies to describe and explain their ideas while they are switching between layers, so the same conversation may work on several

layers at the same time – two interlocutors may not be talking ‘space’ on the same layer in the same conversation. This phenomenon is reflected in many negotiations between children and designers, as the interactions happen during the building models stage in the case of the Cologne and London case studies.

The Ljubljana case study is slightly different, because the interplay between fantasy and reality happens in real space, in the site where the redevelopment is planned. The ‘model space’ is replaced by the school open space, and the ‘imagined space’ is being used in real life scale, by children using their full bodies for depicting activities. The data shows constant leaps from the school space to fantasy, which is described by words and ‘acted out’ using bodies. The negotiations of spatial literacies are more immediate and descriptive, as the intermediate medium of small scale models is not present. The children’s described and enacted ideas open up many possibilities for the designers to create their own ‘imagined spaces’ in their minds, which are not restricted by the shapes, qualities and colours of model materiality.

7.3.2 The interplay between fantasy¹⁹ and reality²⁰

The levels of talk are linked with some gestural and materials actions, which I here refer to as ‘bridging actions’, which ‘act out’ as if the created mini spaces from the model world are actually real. These actions are the links or the bridges between the ‘real’ and ‘fantasy’ worlds, and they allow the interlocutors to identify what layer of conversation they are engaged in at a given moment. To show that they are referring to the ‘fantasy world’, the participants ‘act’ as spatial users, engaging in the ‘fantasy space’ through talking about how they are using it in the moment (in many instances using reported speech – see Example 4), or using parts of their bodies – most commonly hand gestures, to inhabit the model space (for example running up and down the stairs using fingertips as feet).

Within the context of spatial literacies, the interplay between fantasy and reality can only create meaning and understanding of space by applying or using one’s

¹⁹ The ‘fantasy’ or the imaginary world is the world participants are designing in their imaginations, existing in individual heads, coming to life as they use talk, gestures and materials to describe it.

²⁰ The ‘reality’ in this sense means the ‘real world’ that exists in this room that we can see, feel, and touch right now: the world of the little material model or drawing.

spatial literacy. To be able to understand the meaning of moving fingertips along a cardboard box, one needs to be able to ‘read’ this action in the context of the fantasy world where cardboard levels is a staircase and the fingertips are feet. The ‘fingertip’ may be interpreted in the ‘fantasy world’ as the foot, corresponding to what a foot would be doing in the ‘real world’ – running up the staircase. This interplay between the ‘real’ and ‘imagined’ universe is described in the context of play by Bateson, who argues that (applied to my data), what the running up the stairs itself ‘denotes’ it cannot be fully defined in the ‘fantasy world’, where the actual act of ‘running up the stairs’ cannot exist (Bateson, 1987). In this sense, the activities that take place in the ‘fantasy world’ projected on the top of the ‘real world’ of models and ideas, can never be fully imagined and defined as how they would be in the ‘real world’ of the final built design that is being imagined.

The concept of ‘frame analysis’ coined by Goffman, describes the ways in which people frame their talk in the context of ‘What is going on here?’ and ‘Under what circumstances do we think things are real?’ (1986). The abstraction of reality and framing ‘where we are at the given moment in conversation’ is a constant process in conversation (Goffman, 1986) and further work on the interplay between fantasy and reality in design workshops could benefit from the application of his theoretical framework.

8. *Conclusions*

8.1 Thesis overview

After an initial field overview exploring the key concepts that surround child-designer interactions, the main focus of study was identified. A review of literature was used to construct a theoretical framework of 'spatial literacies', which is the theoretical lens for interpreting and understanding the data.

This research aimed to contribute to the understanding of spatial design process, by creating a portrayal of how communication happens between two different cultures through the lens of emerging 'spatial literacies' of participants. I explored in more detail the ways in which 'spatial literacies' are shown and negotiated through communication between spatial designers and children involved in a participative design workshop.

I asked the following research questions on my journey of exploring three live design case studies:

How are spatial literacies manifested and negotiated in interaction between children and designers engaged in spatial design?

What is the role of verbal utterances, gestures, visual aids, and acts of manipulating physical artefacts, when communicating ideas about space?

How do spatial designers create conditions for experiencing specific skills for reading and writing space?

How are different understandings of reading and writing space negotiated between participants?

I began exploring these questions by constructing thick descriptions of the communication and the meeting of two cultures –design culture and childhood culture. Within these descriptions I aspired to depict in as much wholeness as possible my understanding of the experience of those involved in case studies, including myself - playing a different role in each case study. My voice, the voice of an observer of other people's lives and of my own life, plunged into the 'depth and detail of the description, the accuracy of what it portrays and the insights it offers to readers about the situation' (Denscombe, 2010, p. 86). As an 'idiographic' approach to ethnography, 'a one-off, in-depth portrayal, detailed description and picture of specifics based on first hand observation in naturally

occurring situations' (Ibid, p. 87), these descriptions were created as valuable and distinct kind of data, located within a theoretical context.

Within those thick narratives, I adopted Conversation Analysis (CA) approach to look at selected, most representative interactions in more detail. Used in combination with ethnography, CA helped to uncover some actions that designers were achieving through the ways in which they designed their talk, and the ways the workshops were structured from an interactional point of view.

Through the approach of autoethnographic narrative adopted in the second case study, I take advantage of my dual role as a designer and a researcher to create a unique understanding of experiencing communication with children from first hand.

In the final, discursive part of the thesis, I traced 'spatial literacies' through emerging findings across three case studies. The ethnographic and autoethnographic rich picture made a great contribution to the emergence and interpretation of the findings. The detailed and immersive description of cases informed my interpretations of emerging themes through CA analysis, and helped me form specific understandings of spatial literacies when applying the theoretical framework.

8.2 Contribution to knowledge

The original contribution of this thesis is a detailed portrait of how two cultures – childhood and design culture – meet through the process of communication. Issues raised through this research contribute to the broader debate on how to support more effective communication in spatial design participation.

The initial readings suggested that there is a substantial gap in existing literature regarding the deeper understanding of the mechanisms of communication in spatial design processes. There are also shortcomings in existing approaches to analysing communication in a specific context where multimodal expression prevails. The original contribution to knowledge results from drawing upon theoretical and methodological approaches that are novel - yet relevant - to the core field of spatial design. Using the theoretical framework of 'spatial literacies' as a lens to examine child-designer multimodal communication has allowed new

insights to emerge, helping me understand the nature of communication in design processes a little bit better. Throughout my data description and analysis, I show various ways in which spatial literacies are manifested and negotiated in interaction. However the analytical approach I undertook unveils some aspects of naturally occurring verbal utterances, gestures, visual aids, and acts of manipulating physical artefacts, in a more wholesome, integrated way.

Spatial literacies, or ways in which people read and write space, were enacted and manifested through a rich variety of using talk, hand gestures, and the use of various model building materials and artefacts available at the design workshops (as explored through descriptions and analysis in Chapter 6). The approach of using ethnography to inform the context in which talk is being analysed, allows immersion into experiencing the child-designer talk in interaction as an observer – evoking reflections, sensations and emotions from the reader (Ellis and Bchner, 1996). Communication between children and designers in the first case study (subchapter 6.2 Cologne) and the third case study (subchapter 6.4 London) was observed and experienced in a broader context, which informs the granular level of CA analysis (subchapter 6.5). The novel methodological contribution is adding the approach of autoethnographic narrative adopted in the second case study (subchapter 6.3 Ljubljana), where I take advantage of my dual role as a designer and a researcher to create a unique understanding of experiencing communication with children from first hand. Using these approaches, the use of verbal utterances, gestures, visual aids, and acts of manipulating physical artefacts was shown to be vital in spatial expression.

Spatial designers created conditions for experiencing skills for reading and writing space in a way that allowed children to focus on features selected by designers (discussed in subchapter 7.1.1). The experienced or ‘learned’ new skills for reading and writing were then used by the children to negotiate their understanding with the designers (discussed in subchapter 7.1.2).

The underlying potential of expanding one’s spatial literacies through interactions with other people is ‘reading and writing’ space in new ways, and hence opening new possibilities to making choices in design. As Kress and Van Leeuwen suggest, ‘designer’s limitation to his possibilities of choice lies within the awareness of what resources are available to him’ (2001, p.55).

‘Communicational and representational resources, whether highly abstract, such as “discourses”, or entirely materially concrete, can become subject to (conscious) design.’

(Kress and Van Leeuwen, 2001, p.55)

By adding understanding that ‘resource availability’ may be expanded through expanding the limits of one’s spatial literacy, I make a contribution to the field of spatial design.

Extending the limits of exploration by crossing the already blurred borders with other disciplines is not a new idea for architecture. Many lessons can be learnt about oneself when one exits the comfortable boundaries and looks back, learning something new from another place, only to return to the starting place which can never really be the same again – it has altered as much as one has been altered by another discipline. With this research I exited the domain of spatial design and explored how the disciplines of human communication and literacy may be used for learning lessons about spatial design processes. It is through the novel application of theoretical and methodological approaches drawn from these fields that a new contribution to knowledge is made. The fields that this thesis may make a contribution towards is therefore not just Spatial Design, it is also Applied Conversation Analysis, Human Communication Science and an overall methodological contribution to any social science research interested in human interaction.

8.2.1 Practical implications of findings for spatial design professionals

If I had to choose one message it would be this: Being able to see things in a different way will expand one’s possibility thinking, and expand one’s own spatial literacy, as described in the section above.

Spatial design professionals involving users in the design process are in a way inviting them into their own worlds, and vice versa. Engaging in such activities requires an understanding that ‘spatial literacies’ of those involved may vary immensely, which is something that may cause conflicts and unfruitful outcomes.

Individual spatial literacies are impossible to predict, however it is possible to understand the process of how they are used in communication with others, and how the mechanisms of negotiation are something that can be facilitated and used as a potential to work on.

It is not within the intentions of this research to provide practitioners with a set of guidelines on what supports effective dialogue. This thesis offers an in-depth portrayal of communication and emerging spatial literacies based on what was explored within three case studies. Becoming more aware of how communication takes place by reading other people's experiences and granular, detailed deconstructions of interactions, may inform designers' own practice through introspection and increased reflexivity.

When designing tools and methods for designing with children, practitioners should be aware that gestures, talk, objects work together when reading and writing space. And what is more important, they should be aware of that fact when they interpret and discuss ideas with children.

8.2.2 Methodological contribution and challenges

This methodology is aimed at producing new knowledge, which directly depends on my own positionality as a researcher and as a practitioner. I see it as a type of intersubjectivity between what I read, explore, observe, ask, respond, write, and how I interpret it before I write it again.

So far I have not found evidence of a similar combination of research approaches in literature. The novel combination adopted in this thesis brings some advantages to the field of studying spatial design, as well as to the individual methodological traditions used in combination with others. It also brings some drawbacks and challenges to my work – by combining various approaches to create synergies I do not get the chance to explore any of them in as much depth as I would have if it was the only approach.

The detailed transcripts and analysis in the tradition of CA offer an insight into design communication which is quite specialised. Looking at these transcripts alone may not make much sense without taking into account the wider context,

provided by the detailed narratives of Ethnography and Autoethnography. In this sense, these approaches form a synergy and add more to the understanding of data than each of these approaches would have done individually.

Throughout my data description and analysis, I show various ways in which spatial literacies are manifested and negotiated in interaction. However the analytical approach I undertook unveils some aspects of naturally occurring verbal utterances, gestures, visual aids, and acts of manipulating physical artefacts, in a more integrated way.

On the other hand, CA provides ethnography and autoethnography with a granular, zoomed in insight into transcripts of communication. A systematic way of analysing how things are said in the moment, as well as in the larger scale of things, adds added value to the analysis and consequentially contributing to understanding and knowledge. Bucholtz argues that traditional, ethnographic transcription, may omit some interactional properties of data by focusing on ‘what’ is being said (2007), which may have strong implications on the analysis:

‘Several years later, I returned to the original recording and was astonished and horrified to realize that in the interests of focusing on content, my transcript had systematically erased every interactional nuance of the data’

(Bucholtz, 2007, p. 787)

Using a precise transcription method which has ‘unusually strong demands on the accuracy of the data’ (Edwards, 1993, p. 214) may reveal a different view of the analysis. As a result of having combined this method with ethnography, the detail of talk in interaction is provided by a rich, in-depth contextual narrative. Therefore I propose the use of this approach could be applied in various contexts where communication is in the centre of research interest. This kind of approach can be replicated in studies focusing on communicational phenomena that rely on understanding the specific contexts they are situated within (such as in my case the context of design). I would also suggest further research to refine the method in ways that blend the borders between the approaches of ethnography and CA even further, revealing the more direct relationships between thickly described fieldwork experiences and the micro-level of talk that happened within them.

8.2.3 Reflections on methodology: messy reality and the need for flexibility

Pink suggests that ethnographic research methods should not be prescribed too far in detail before starting research, as it is important to get oneself familiarised with the context of the situation surrounding the research interest, before choosing and defining methods (Pink, 2013).

At the beginning I was leaving room for flexibility and openness with some guilt and discomfort. Later I gave into the messy reality, accepting that it is ok to leave methods flexible to a certain extent and let them adjust to fieldwork as it happens. Because social reality is unpredictable in its nature, and there will always be unknown factors emerging from everywhere.

Capturing various perspectives on conversations between participating designers and children required detailed pre-planning, by imagining all possible things that might, and perhaps might not happen at all. This thesis reports a chronological narrative of methodological approaches and methods used to capture communication, but the reality never happened as neatly as described. To begin with, a large influence that shaped the research methods in the field came through collaboration with child and designer participants, and researcher colleagues working on the project.

For example, the exact space layouts where the three case studies took place were unknown until the moment I arrived at the location, so the video and sound recording devices had to be positioned within minutes, in spots where they could catch the majority of action, as well as be nonintrusive and as well be close to an electricity socket. Electronic equipment also malfunctioned and ran out of memory space at the worst moments, so constant checking became my regular practice. The availability of time and space to conduct interviews with participants was also to some extent unknown and limited. The first case study in Germany included interviews with children as part of the overall session. This was extremely helpful for conducting interviews, yet at the same time it meant that I missed out on the rest of the design activities taking place at the same time. The provided location was quite a loud setting with plenty of commotion and talk

between adults and children. The principal investigator provided her son's pop-up sunshade tent to help secure the interview space from the overall commotion.

The experience from the first case study in Germany most definitely helped hone design methods of the second and third case studies in Slovenia and the UK. Every completed case study visit also influenced my scope of focus in the following ones, and had impact on redefining my research interest. Revisiting data after all three case studies were completed allowed me to indulge in further reflections on the process. Based on my reflections I added more relevant literature to the theoretical framework, and scoped my interests more specifically regarding the process of addressing research questions.

8.3 Reflections on the journey: end of the line

Here I share some of my final reflections about this journey that I believe might help me improve in future, and might influence my own or potentially others' further research.

Reflecting first on the case studies themselves and how they were included in my methodology, there are a couple of points that I could highlight. What I see as the main benefit of having three consecutive case studies is reflected in the ways that my narratives focus on slightly different things. The narrative surrounding the first case study in Cologne focuses on the general aspects of the whole workshop process, with some attention to communication and how space is being read and written by the children and the designers. During a very intensive first-hand experience of a similar process in the second case study in Ljubljana, the focus is much more oriented inwards, towards my own experiences of the whole process, and the glimpses into how literacies are emerging from the children, are greatly informed by the first case study. The third case study in London shows a much clearer focus on what I understand as reading and writing space, and as I observe the whole process from the point of view of a researcher, I begin to notice some similarities emerging from the former two case studies.

Although I treat the case studies equally from the viewpoint of spatial literacies, the investigated live design case studies are actually quite different from one another. They are situated in different countries (Germany; Slovenia; England),

they aim to design different types of places (part of a department store café area for children; evaluating school open spaces to design a redevelopment long-term plan; design of a new play structure in the existing school playground), they take place at different stages in the design process (second participatory workshop in the concept forming stage; brief development and concept drafting; first and only participatory workshop in the concept stage), they use different methods (combining parts of a deconstructed design model; video voice in combination with collages and 1:1 scale model building; sketching and writing in combination with small scale model building), involve different numbers and ages of children (6 children aged 6-9; 11 children aged 7-10; 13 children aged 6-10), they take place in different settings (inside of a restaurant space; in the school open space; inside of an arts classroom), and my role of involvement within them is also different in each case (researcher-interviewer as part of the process; designer, organiser, facilitator and researcher; researcher observer). All these differences may have had large implications on how the case studies took place, however they all created the circumstances that my research was interested in – a live design project which involved children and communication.

Amongst the numerous themes that emerged during the past four years, the key ones that deserve to be studied in more depth in further research are values of space, power relations, improvisation, possibility thinking, making, shaping, using of hands, pretend play, symbolic creativity, togetherness, dialogic and dialectic conversations, experimentation, collaboration, co-construction, co-design, co-creation, unpredictability, transgression, transformation (some of which are already explored in more depth through the larger project of this PhD: Jo Birch et al., 2016a and 2016b). In the field of CA there are also many subthemes through which I would like to explore my data in more depth: the use of indexicals in interaction, repair initiation as part of design, use of gestures and materials during silences, the use of humour and jokes during design, to name a few.

As mentioned earlier, one of the main contributions of this PhD is that its theoretical and methodological approaches are novel to the field of spatial design. With this thesis, I portrayed ‘spatial literacies’ as they are manifested and negotiated through child-designer talk in interaction in spatial design process. At the time of this research, spatial literacy could be in most general sense understood as a skill to read maps and find one’s way in physical space. My

findings show that it can be understood as much more than that: it is a variety of skills required to read and write physical space and its representations, which are developed through social interactions, and expressed through a combination of talk, gestures and the use of artefacts.

In conclusion, this thesis has contributed to overall awareness that spatial literacies are multiple, and they are expressed in various ways. This awareness may be beneficial to the discourse on conflicts and misunderstandings arising when public are involved in spatial design processes. Which brings me back to the initial issue of 'participation in design' – this research did not add to the definition or understanding of the term. However adding a very important aspect of understanding how people read and write space in their own ways when they are communicating within design processes, may contribute to some awareness within the field of spatial participation.

So this is it, we have made it to the end. You have joined me on what has been a very bumpy ride for me, but I hope you still enjoyed the journey. Despite all the parts that could have been written differently and regardless of all the things I could have done but haven't, I believe that this thesis still contributes some novel knowledge to the world. But most important to me is that the work on this thesis has equipped me with most invaluable skills for life, and the process of research has shaped me as a critical thinker, a reflective researcher and a more aware practitioner.

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Appendices

APPENDIX 1: TRANSCRIPTION CONVENTIONS USED IN THIS THESIS

Jeffersonian transcription conventions in Conversation Analysis (Jefferson, 1984):

Symbol	Name	Use
[text]	Brackets	Indicates the start and end points of overlapping speech.
(1.5)	Timed Pause	A number in parentheses indicates the time, in seconds, of a pause in speech.
(.)	Micropause	A brief pause, usually less than 0.2 seconds.
↓	Down Arrow	Indicates falling pitch.
↑	Up Arrow	Indicates rising pitch.
-	Hyphen	Indicates an abrupt halt or interruption in utterance.
>text<	Greater than / Less than symbols	Indicates that the enclosed speech was delivered more rapidly than usual for the speaker.
<text>	Less than / Greater than symbols	Indicates that the enclosed speech was delivered more slowly than usual for the speaker.
°	Degree symbol	Indicates whisper or reduced volume speech.
ALL CAPS	Capitalized text	Indicates shouted or increased volume speech.
<u>underline</u>	Underlined text	Indicates the speaker is emphasizing or stressing the speech.
:::	Colon(s)	Indicates prolongation of an utterance.
(text)	Parentheses	Speech which is unclear or in doubt in the transcript.

Annotation of non-verbal activity and handling physical artefacts (adapted for the needs of this research, based on Jefferson, 1984):

Symbol	Name	Use
((text))	Double Parentheses	Annotation of non-verbal activity.
<u>((text))</u>	Double Parentheses, Grey Highlight	Annotation of non-verbal activity and handling physical artefacts as shown on the video still adjacent to transcribed text (see example below).

EXAMPLE

Cai: [but] I've got an idea (4.0)
((browsing through available materials))



TRANSLATION OF NON-ENGLISH DATA (ADAPTED FOR THE NEEDS OF THIS RESEACH, BASED ON (BUCHOLTZ, 2007; MOERMAN, 1988))

The first line is transcribed in the language, originally used by participants in recorded data. The second line is normally a word-by-word literal translation into the language in which research is written. The third line is a grammatically correct version of the translation, with capturing as much of original meaning to the transcript as possible.

EXAMPLE

1st line	Ok (.) wo kommst du rein	German
2nd line	Ok (.) where come you in	Literal translation ²¹
3rd line	Ok (.) where do you come in	Translation

²¹ In my research, the second line was omitted, as German and English language share similarities in grammatical structures, so the second and third lines would not differ to the extent that would influence the analysis or understanding of data.

**APPENDIX 2: EXAMPLES OF INFORMATION LEAFLETS AND
CONSENT FORM**
(ENGLISH VERSION)



Information Sheet & Consent Form
for Children & Young People under 16

Hello!

Would you like to be part of our research project?

We are researchers from The University of Sheffield. We are finding out about doing design with children and young people

Your teacher or parent will tell you exactly what our project is about and what will happen. You don't have to take part – it is up to you. If you say yes, but change your mind later that is okay – just tell us or your parent/carers, teacher.

One of our research team will ask you some questions and record what you say so that we don't forget it later. We will only take photographs of you and your work if you say that this is okay. We will only take videos of you and your work if you say that we can. We will store everything safely on computers with passwords.

Once we have done this project we will write a report about what we find out and give this to the University. We might also tell people what we have found out by doing presentations and writing articles and books. We will not tell anyone your name and we would only show photographs or videos where your face can be seen if you say that is okay.

Thank you for your time.

Research project: Designing with Children (case studies)**Please put a circle around yes or no**

Has your teacher, parent or carer told you about this research project and what will happen?

Yes

No

Did your teacher, parent or carer ask you if you had any questions about the project?

Yes

No

Do you know that you don't have to take part in the study if you don't want to?

Yes

No

Do you know that the researcher will write about the things you say and do in the project, but your name will not be written down?

Yes

No

Is it ok for us to take photographs and videos of you and your work for our research?

Yes

No

Is it okay for us to use the photographs and videos of you and your work in reports, books and presentations that we will show to other people?

Yes

No

It is okay to use photographs of you and your work when we make a project website?

Yes

No

Would you like to take part in our research?

Yes

No

If you decide you don't want to be part of this project anymore, or don't want to be photographed anymore, that is OK. Just tell your teacher, parent or carer._____
Your name_____
Date_____
Signature_____
Name of person taking consent
(if different from researcher)_____
Date_____
Signature*To be signed and dated in presence of the participant*_____
Researcher_____
Date_____
Signature*To be signed and dated once received from participant**Copies: Once signed the participant should receive a copy of the signed and dated participant consent form, the information sheet and any other written information provided to the participants.**A copy of the signed and dated consent form should be placed in the project's main record (e.g. a site file), which must be kept in a secure location*

APPENDIX 3: INTERVIEWS WITH PRACTITIONERS - QUESTION GUIDE

1. Creative process

1. What is your understanding of creativity?
2. How do you experience creativity? (i.e. describe the creative process)

ACTIVITY 1: Ask the designers to draw/map out their creative process

Discussion based on the activity: what are the highlights/moments of transformation and discomfort in your creative process?

2. Design process and creativity

1. What does it mean to you to be creative in the design process?
2. Does your creative process match your design process?

ACTIVITY 2: Ask the designers to draw/map out their design process. Here they can use different colour pens to complement the previous creative process map. Alternatively, this may be a different drawing altogether.

Discussion based on the activity: what are the highlights/obstacles to creativity in the design process? What conditions can enhance creativity in the design process?

3. Collaborative design/co-design (attitude v. practice)

1. What are your views on design collaboration?
2. Do you think that it is possible in practice?
3. Is it different to work with other designers from working with non-designers? (prompt: give examples from experience, pros and cons etc.)
4. In what ways does design collaboration affect the creative process?

ACTIVITY 3: ask the designers to show/draw on the map when they think it is best to involve others in the design process (use handshake stickers)

Discussion based on activity: what are the affordances of the design process for collaboration? Are there any particular conditions/settings which encourage design collaboration?

4. Collaborative design with children (attitude v. practice)

Part 1 (views on children)

1. What is it like to involve children in the design process?
2. What are your own motivations in working collaboratively with children?
3. In what ways is working with children different to working with other adults?
4. What do you think children bring to the design process?
5. Do you think that children are creative in different ways from adults?
6. Do you think that designers and children are creative in similar ways?

Part 2 (own experience working with children)

1. What is your most memorable experience working with children on a design project? (ask to briefly describe the what/when/how)
2. Did you use any particular techniques to involve children?
3. Does play have a role (to play!) in the co-design process with children?
4. What were your main reactions during this process?
5. How did children respond to co-design?
6. In what ways did children contribute to the creative process?
7. Has children's input had any impact on the design outputs and outcomes?
8. In what ways have your experiences working with children affected your own practice?

Part 3 (closing discussion)

1. What are the key conditions enhancing collaborative design with children?
2. What are the key barriers in collaboration with children?
3. Are these different when working with other adults/designers?
4. If you could give some advice to designers, who want to involve children as co-designers, what would that advice be?
5. And if you were to do the same for children who are interested in design collaboration with adults, what advice would you give to the children?

APPENDIX 4: SUMMARY OF THE CASE STUDIES INCLUDED IN THE WIDER RESEARCH

Title: Children Transforming Spatial Design: creative encounters with children

Duration: 7th January 2013 - 6th January 2016

Budget: £231,059

Lead Applicant: Dr Rosie Parnell (0.2 FTE for the project)

Research Associates: Dr Joanna Birch (0.5 FTE); Dr Maria Patsarika (0.5 FTE)

Research Assistant (PhD studentship): Maša Šorn (Full-time PhD student)

Key Partners in Architectural Practice: Dan Morrish, Building for Families; Susanne Hofmann and Martin Mohelnicky, Die Baupiloten; Barbara Kaucky, erectarchitecture; Marianthi Liapi and Kostis Ougrinis, Intelligent Transformable Environments Lab.

Institution: University of Sheffield (School of Architecture)

Fieldwork locations: Chania, Greece; Cologne, Germany; East Sussex, UK; London.

My doctoral research is based on a Leverhulme Trust-funded research project running from 2013-2016 called 'Children Transforming Spatial Design: Creative Encounters with Children' (www.designingwithchildren.net) led by principal investigator Dr Rosie Parnell in collaboration with research associates Dr Jo Birch and Dr Maria Patsarika. 'The research aimed to explore co-creative design dialogue between children and designers in live spatial design projects, with a focus on the dynamics and processes of designer– child interactions' (Birch et al., 2016b, p. 226).

The research project included a critical review of literature, a review of existing relevant practice, a survey of practitioners in the field and four live design case studies. Two of these cases were also included in the PhD research study. Focused ethnographies for each of the cases were carried out during 2014 - the second year of the duration of the research project. The studied cases were rich and

complementary: they represented various design approaches, they adopted several different methods for involving children, they were commissioned to design various types of spaces, and they were carried out over different lengths of time.

In each case we observed a core session (or set of sessions) where the design team interacted with the participating children. Using a 'focused' ethnographic approach, we enhanced field notes with photographs and film footage, which we were later able to revisit and analyse. Each session was positioned in a broader description of the design process, gathered from project documentation via the design team and through their direct accounts of each project.

- Wilderness Wood, East Sussex, UK: a woodland area, where a group of eleven children aged 5-12 spent a day taking part in the design process and hands-on construction of an outdoor shelter/kitchen with an architect (one day workshop observed);
- Department store café, Cologne, Germany: a group of six children aged 5-12 worked alongside a team of architects in visioning the design of a children's area within the café they were working in. The second of two workshops, this process focused on various configurations and interpretations of different physical models made by the children and the architects (one half day workshop observed);
- Primary school, Tower Hamlets, London, UK: a pupil group of thirteen children aged 6-11 created models for their school grounds design/redevelopment process during one workshop (one half day workshop observed), and;
- Primary school, Chania, Crete, Greece: the sixth grade (twenty children aged 10-11) collaborated with a team of architects to develop designs and construct a library/book facility for their school. This was part of an ongoing three-year collaboration between the school and the architects to co-develop design ideas for the school grounds and internal spaces through re-use of materials (two-day workshop observed).

In addition to taking part in conversations ‘in the field’, we carried out interviews with the designers and participating children in each case, exploring their experiences and their understandings of the process. These interviews included and were aided by a number of representation processes and visual products that we asked the interviewees to create and then talk about, including:

A design journal (designers)

A process diagram (designers)

A role-play (children)

A storyboard (children)

Photographs (children)²²

The qualitative and thematic analysis of all data was conducted with the help of NVivo qualitative data analysis software. The interviews and verbal interactions captured through video were transcribed and translated before included in the thematic analysis. Further information about the project and the findings can be found on www.designingwithchildren.net and in journal paper ‘Participating together: dialogic space for children and architects in the design process’ (Birch et al., 2016b).

²² Where it was not possible for participants to take their own photographs, we also used photographs that had been taken by the research team to discuss in the interviews with children.